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THE ETHICS OF MAKING: DESIGN FOR REUSE AND REPAIR

Developing an alternative strategy for studio-based craft and design in a world full of stuff

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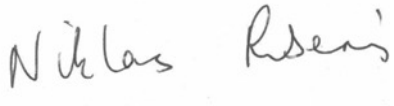
Declaration of Originality



I, Niklavs Rubenis, on the 31st August 2018, hereby declare that the thesis presented here is the outcome of the research project undertaken during my candidacy, that I am the sole author unless otherwise indicated, and that I have fully documented the source of ideas, references, quotations and paraphrases attributable to other authors.

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ABSTRACT

We exist at an interesting point in time. Waste is exponentially increasing; resources are diminishing; yet we are accumulating more and more possessions. The world is inundated with stuff; it is everywhere—in our houses, our offices, on our streets and littering our environments. Stuff has become a problem.

This is a conundrum for studio-based craft and design (SBCD),[1] the lens of this project, which, like many design endeavours, has a preoccupation with the design and the making of products. This reality raises challenges around roles, responsibilities and ethical imperatives that drive SBCD in the 21st Century. If it is acknowledged that design (action) and craft (making) is responsible for authoring the construction, altering and interaction of our built environment, then perhaps both are powerful tools in how we shape our physical existence on this planet.

SBCD, however, appears to be in crisis often marginalised as a vocation taught and practiced bound to past models that fail to sufficiently make links with salient issues of our time. As such, over the last several years many educational programs that have supported SBCD across Australia have been discontinued or amalgamated into larger homogenous programs; the last decade or so has also seen a swag of cultural organizations move to drop "craft" from their titles; and there appears to be a decline of professional craftspeople.[2, 3, 4] This presents as another conundrum and raises the question of the value and relevancy around SBCD's offering to a rapidly changing and increasingly complex world.

Yet SBCD has many worthy inherent attributes. It is a localised practice that supports a local ecology that further promotes high-level technical, material and creative skills. Because SBCD also focuses on an individual in a studio free from industrial constraints or imperatives, this gives a practitioner critical agency. But for SBCD to make a relevant and timely contribution to a world drowning in things will require a decoupling from existing modes of practice and a deeper understanding of design and its impact to social, cultural, political, economic, emotional, environmental, historical, ethical and technological imperatives—an exploration beyond lingering Modernist ideals of design as an aesthetic 'form-giving' pursuit.

This is the motivation for this practice-led-research: To interrogate the 'whys' and 'hows' of practice and to seek and develop an alternate strategy for SBCD that squarely faces a question that essentially unravels the very core of what it does—*why make more stuff*? Through exploring a broader perspective of design and by focusing on universal issues that transcend any one discipline, this research considers that SBCD turn attention to dealing with that which already exists. This manifests with a focus on creative challenges and opportunities for design's engagement with reuse

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[1] SBCD is a distinct yet related activity to industrial design. SBCD can be defined as an individual skilled worker with deep technical (hand, machine and digital) and material knowledge, rooted in the traditional aspects of a specific craft discipline, who works in a studio generally separated from markets and business constraints of industry. SBCD practitioners develop capacities that allow agility and flexibility to work independently (such as a studio) or collaboratively (within the realms of industry) to achieve a desired end. Often those practicing SBCD are referred to as a "designer maker".

[2] In a report focused on surveying the creative industries in Australia, Throsby and Zednik state that: "The numbers of craft practitioners have continued their long-term downward trend…"
David Throsby and Anita Zednik, *Do you really expect to get Paid? An economic study of professional artists in Australia* (Sydney: Australia Council for the Arts, 2010), 19. Accessed 18 January 2014.
http://australiacouncil.gov.au/workspace/uploads/files/research/do_you_really_expect_to_get_pa-54325a3748d81.pdf

[3] One of the key findings in a 2014 report, *Mapping the Australian Craft Sector*, Heath and Pascoe write: "To support the future health of the sector, new models of working need to be explored…"
Liana Heath and Joe Pascoe, *Mapping the Australian Craft Sector* (Sydney: National Craft Initiative, 2014), 74. Accessed 16 September 2014.
https://gallery.mailchimp.com/198e0c90d7ed9366663b46f99/files/dc45d865-3d38-4762-8b18-ee254ced679e.pdf

[4] Throsby and Petetskaya have noted that creative incomes have dipped: "When adjusted for inflation, average incomes have fallen by 4% since 2009".
David Throsby and Katya Petetskaya, *Making Art Work* (Sydney: Australia Council for the Arts, 2017), 18. Accessed 18 December 2017.
http://www.australiacouncil.gov.au/workspace/uploads/files/making-art-work-companion-repo-5a05105696225.pdf.

and repair. Effectively, I use SBCD as an exploratory tool for inquiry into a) environmental concerns of waste and these links to design; b) as a strategy for giving alternative values to goods that have been discarded; c) and as a practice that engages with social, cultural and ethical concerns when presented with issues outside of domestic disciplinary concerns.

Initially revolving around the sub-genre of furniture and objects, the practice that is presented here transforms into a much wider scope of what could define a model of SBCD within an Australian context. Through performing 'micro-interventions' into globalised flows of transient materiality, this research develops a case for SBCD. When recomposed within an ecology of practice, and by redirecting offerings that engage with issues beyond an object, SBCD has a relevant and worthy contribution to make to both the sustainment of the built environment and to material culture.

This project is the beginnings of an alternative mode of practice.

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PREFACE

Personal motivation for this project

At the time of writing the first proposed draft for this research—now what seems like an eon ago—I'd been reflecting on a decade or so of employment in the design and manufacturing industries.[5] Given that the nature of the design industry is fickle and trend-driven, I was becoming increasingly interested in what might constitute other areas of design engagement that countered the industrial juggernaut of blindly producing more stuff. Industry relies heavily on a turnover of product and I found myself in a continuing cycle where little seemed to change. Although I had worked on some interesting projects across Australia, every day was more or less the same negotiation of constrictive budgets, time and project expectations; business, client and stakeholder expectations; and the design or making of more and more stuff without a clear objective as to 'why' beyond it being just a service or the means to generate capital.

Beginning a journey in teaching also hatched an uneasy gut feeling of fraudulence. I realised very quickly how little I knew about my own motivations and practice of design other than it being a stylistic or skill-driven pursuit. After reading *Design Futuring: Sustainability, Ethics and New Practice* by Tony Fry, I realised, although working in the field of design, that I was actually quite ignorant to design and its broader context and impact on the world and what role design plays in facing imperatives of escalating environmental and ethical issues.

This was a case of that clichéd 'you can't teach what you don't know'. The world was changing and bringing with it a barrage of complex issues that I was implicated in but knew nothing about. It became very clear that my understanding and experience needed to change too. If I was to continue practicing or even teaching in a meaningful and responsible manner, my approach and depth of awareness of being a 'designer' needed to be redirected away from 'old' practices bound to out-dated models into the development of something 'new' that was responsive to current concerns.

The muddy definition of sustainability

During that time of writing my PhD proposal, *The International Specialised Skills Institute* (ISSI) in Melbourne had commissioned several research papers into 'sustainable' furniture practices. One report clearly stated that, "There seems to be conflicting dialogue within Australian industry as to a single acceptable common meaning of sustainability".[6] In previous discussions over the years with several senior colleagues, there was also debate of what sustainability meant regarding practice.[7]

So, originally, the premise for this project was born from a seemingly straightforward question: What defines 'sustainability'? And furthermore, how does an understanding of sustainability manifest when focused through an individual's studio practice? I have since discovered that there is much validity in the ISSI reports. Sustainability is indeed a muddy word, difficult to define and challenging to put into

---

[5] Professionally I have been employed across many aspects of the furniture and design sectors. This has included high scale manufacture; computer aided design and computer aided manufacture (CAD/CAM); computer numeric control and laser technology; commercial cabinetry; production and fine furniture making; shop and museum fit-out; exhibition design; project and design management; public art; urban design; musical instrument making and teaching at community, trade and university levels. I have also maintained my own individual studio practice consisting of commission work, one-offs and the occasional speculative piece for exhibition in a gallery setting.

[6] Jennifer Critchlow, *End of Life Furniture Sustainability* (Camberwell: International Specialised Skills Institute, 2010), 9. Accessed 18 July 2012. http://issinstitute.org.au/wp-content/media/2011/04/ISS-FEL-REPORT-J-CRITCHLOW-low-res.pdf

[7] Dr Rodney Hayward is a furniture academic, prolific writer, practitioner and former Head of Furniture, School of Art & Design, Australian National University. In an email he stated sustainability is: "…patted about without a great deal of clear-headedness of what it actually means in the context of practice…"
Dr Rodney Hayward, e-mail message to author, 17 May 2010.
Celia Quattrociocchi was the Manager of Product and Innovation for Zenith Interiors up until the end of 2017, one of the largest Australian commercial furniture companies. Zenith has importing, manufacturing and distributing facilities throughout Australia, New Zealand & Asia. In an email she commented: "The furniture industry as it operates today cannot continue in the same way … New practices need to be researched and trialled".
Celia Quattrociocchi, e-mail message to author, 25 May 2010.

practice. It also means many things, partly because we are all tied to a globalised system of production, consumption and disposal that cares little for geographical borders.

However, trying to understand some form of sustainable action does go beyond surface decisions like 'eco-friendly' material, recyclability or the manipulation of a process to gain energy efficiency. This has been my motivation—to look beyond just the making of objects and to shift the thinking around my practice by considering an ethical stance in relation to how I design; and why, how and what I put out into the world.

Attempts to holistically understand design

To make an attempt at understanding what might define a current SBCD practice, a change in thinking obviously requires an engagement with a deeper scope of design and its resulting action beyond a baseline of understanding. This has become an underlying part of this research. I have taken a very broad perspective of design in that this inquiry grapples with the important role that design could play in shaping the future. Throughout this project my understanding of design has expanded significantly, and I now see design as a complex mix of cultural, social, political, technological, ethical, emotional, historical, environmental and pedagogical dimensions.

Process drives the work

The focus of this project is through the lens of SBCD. SBCD is about making. Yet the main focus for this research is not about the finer rote details of making and nor exclusively about issues directly relating to the specifics of SBCD in the design and making of objects and furniture. Of course, it is about making things—this is practice-led research—but the 'value' of the work presented in this exegesis does not lie in what it is or how it looks. I have attempted to shift my practice from the works being endpoints in themselves to instead becoming the vehicles through which to explore and synthesise broader themes by using the works as anchor points for critical reflection.[8] In other words, the process drives the work and perhaps getting there is more important than the end point.

Not the best work

At times, the process of shifting practice has been confusing, muddy and a bit bound up without a clear objective or outcome. I am not a unique snowflake here as this to be true of many who embark on any form of study. Some of the studio outcomes presented in this paper are also not at all my finest pieces of work.[9] They are attempts to step away from previous modes of thinking. I reconciled with this early in the project in that it was not to be about creating the most outstanding and polished craft works that exercised my prowess of skills—if it does that is a bonus but not the intent—rather a situating of a practice within a design ecology.

To let go and be guided by a broader way of thinking has been both hard and rewarding, and a vitally important process. As much as this research is about the practice itself, it is also the results of learning. Like this PhD, any study is educational and focused on the learning of new things. Estelle Barrett, a well-known proponent of practice-led research, offers an insight:

> Learning takes place through action and intentional, explicit reflection on that action. This approach acknowledges that we cannot separate knowledge to be learned from situations in which it is used. Thus situated enquiry or learning demonstrates a unity between problem, context and solution. A general feature of practice-based research projects is that personal interest and experience, rather than objective "disinterestedness" motivates the research process. This is an advantage to be exploited, since in terms of the acquisition of knowledge, artistic research provides a more profound model of learning—one that not only incorporates

[8] I do not discuss in great depth the physical making of any of the pieces presented in the body of this exegesis. Exact decisions such as joinery, machine or hand techniques, detailing and the like, have become rote technical skills. I will touch on some that are important to the project, but much will be left out as this is not the driving motivation for the project. A full documentation of process images can be found in the Appendix.
[9] In fact, some of the examples I produce in this research project are the most unresolved (or worst) pieces of work I have made.

> the acquisition of knowledge pre-determined by the curriculum—but also involves the revealing or production of new knowledge not anticipated by the curriculum.[10]

So, with that stated, let's roll up the sleeves, try sweep up the mess, and see where we end up.

[10] Estelle Barrett, "Introduction," in *Practice as Research: Approaches to Creative Arts Enquiry*, ed. Estelle Barrett and Barbara Bolt (London and New York: I.B.Tauris & Co Ltd, 2010), 5.

INTRODUCTION

Why make more stuff?

We exist at an interesting point in time. Waste is exponentially increasing; resources are diminishing; yet we are accumulating more and more possessions. The world is inundated with stuff; it is everywhere—in our houses, our offices, on our streets and littering our environments. Leading design theorist and author Tony Fry states:

> …we are now at a point when it can no longer be assumed that we, *en masse*, have a future. If we do, it can only be by design against the still accelerating condition of unsustainability… Effectively, what we have done, as a result of the perspectival limitations of our human centredness, is to treat the planet simply as an infinite resource at our disposal.[11]

Fry's statement raises three points central to this project. The first is design, and how, as an action, it is defined and understood in a time of mass-production and hyper-consumption. The second is disposability and resulting waste, which is exponentially increasing. In recent times there has been a proliferation of waste and this has clear links to design presenting itself as both an issue of and for design. And the third is limits and opportunities of sustaining strategies for studio-based craft and design (SBCD) in response to concerns of unsustainable practices by considering waste is a problem that transcends any one discipline.

It has to be stated that all three components are mammoth topics, globally interlinked and inherently complex lines of inquiry far too big for an individual PhD to sufficiently answer. But taking such broad perspectives provides the underlying premise for this project and raises an important question: *why make more stuff?*[12]

AIM 1

Reconciling an ethical conundrum for design practice

Questioning "stuff" is a conundrum for all design particularly so for SBCD. SBCD has a preoccupation with the design and the making of stuff and as I will discuss in the first chapter, stuff is causing serious problems. This raises challenges around roles, responsibilities and ethical imperatives that drive a SBCD practice in the 21st Century. As such, the first aim of this project is to interrogate the 'whys' and 'hows' of a practice implicated in this broader scenario of "stuff" and to develop an alternate strategy for SBCD that squarely faces a question that essentially unravels the very core of what it does. I come at this by re-evaluating an understanding of design beyond just an aesthetic 'form-giving' pursuit that combines existing attributes of SBCD, yet to do this requires attempting to go beyond just simply the making of more and more things. Through this process I conclude that instead of generating something entirely new, perhaps design can turn its attention to dealing with what already exists. This manifests in an engagement with strategies of Reuse and Repair (RR). Over the course of this project, however, notions of RR shift increasingly toward a more transformative approach whereby discarded and broken objects, through community engagement, are re-contextualised beyond original function or intent. This can be referred to as Transformative Reuse and Repair (TRR).[13]

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[11] Tony Fry, *Design Futuring: Sustainability, Ethics and New Practice* (Sydney: University of New South Wales Press Ltd, 2009), 1.

[12] Throughout this paper I refer to "stuff". This is not a flippant use of the term as "stuff" is a field of study. Reference can be made to: Daniel Miller, *Stuff* (Cambridge: Polity Press, 2010); Maurizia Boscagli, *Stuff Theory: Everyday Objects, Radical Materialism* (London: Bloomsbury, 2014); Annie Leonard, *The Story of Stuff* (New York: Free Press, 2010); Randy O. Frost and Gail Steketee, *Stuff: Compulsive Hoarding and the Meaning of Things* (New York: Houghton Mifflen Harcourt, 2010).

[13] Transformative repair "…can be defined as repair that changes an object's appearance, function or perception".
Guy Keulemans, Niklavs Rubenis and Andy Marks. 2017. "Object Therapy: critical design and methodologies of human research in transformative repair." In *Series Research in Design Series Ebook Volume 9: PLATE: Product Lifetimes And The Environment, Delft, 8-10 November 2017,* 186–191. doi 10.3233/978-1-61499-820-4-186
To this definition I will also add reuse, as both are not mutually exclusive.

Design for reuse and repair

RR and even TRR are not new, cultures throughout the world and over time have engaged with these practices as a matter of survival due to scarcity of resources. Currently, as witnessed in the West, for example consumer-based economies such as Australia, there is always seemingly more and more as the structures that support consumption are hidden from view or reside in other parts of the world. Repair industries are also in decline as it is often cheaper to replace and discard than fix. Pertinent to this project is that current consumption patterns are leaving behind a mountain of waste that has to be dealt with somehow.

As a practice, TRR has the potential to slow down resource use by reducing waste to landfill by keeping stuff in circulation. The materials or components used in making something have significant costs—everything has a covert story of embodied energy. This includes resource exploitation such as materials use and the associated extraction or refinement processes; land use; manufacturing; global and local transportation; and let's not forget human ingenuity, labour and skill that is required to physically make the stuff. This is far bigger than just a thing that might get used or becomes obsolete, and then thrown away. As much as this raises a discussion around the embodied energy in objects, it is also about discovering alternative potential values in things and discussing how and why things are valued. Academic Trang X. Ta makes the point that: "…obsolescence is a source of value".[14]

AIM 2

Design engagement with waste and sustainability

Waste is central to this discussion.[15] And by default raises the topic of sustainability. Achieving sustainability and the reduction of society's impact on all life on earth is arguably one of the biggest challenges of our time. Despite issues of sustaining the planet having had such critical focal points at the forefront of many local, national and international public and political agendas, evidence clearly shows that collectively we are not on fast enough routes for change. In fact, things are speeding up and we are producing more and more waste as never witnessed before. Stuart Walker suggests that sustainability is a myth. He writes: "The possibility that sustainable development may not actually be achievable in any practical sense does not, however, make it any less important".[16]

Indeed, this may well be true. Yet as to be discussed in this exegesis, the issue of waste is both a designed problem and a design problem.

Waste provides fertile territory for engagement with practices such as TRR. There is an opportunity here for SBCD; by nature, SBCD has ingrained 'sustainable' attributes. As discussed in Chapter 2, a basic component of sustainability is a decentralising of production and a return to localism as means to shorten supply chains and bolster regional capital. This has both pros and cons. SBCD as a practice has the capacity for localised action through the use of localised materials and localised production methods. This in turn contributes to localised social, cultural and economic ecologies and further provides education through a transmission of local knowledge. However, an exclusive localised focus can also limit the capacity of looking at the world and engaging with globalised concerns, such as escalating issues such as waste.[17]

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[14] Trang X. Ta, "Trading on Obsolescence on the Streets of Hong Kong," *Discard Studies: Social studies of waste, pollution, & externalities* (23 September 2015). https://discardstudies.com/2015/09/23/trading-on-obsolescence-on-the-streets-of-hong-kong/

[15] There are two definitions of "waste" applicable to this project:
a) The *Oxford Online Dictionary's* definition: "(of a material, substance, or by-product) eliminated or discarded as no longer useful or required after the completion of a process".
"Waste," https://en.oxforddictionaries.com, last accessed 18 February 2018. https://en.oxforddictionaries.com/definition/waste
b) Nicky Gregson's definition in *Encyclopaedia of Consumer Culture*: "In its broadest sense, *waste* refers to the residues, leftovers, and discards of commodity production, consumption, and disposal".
Nicky Gregson, "Waste," in *Encyclopaedia of Consumer Culture*, ed. Dale Sutherton (Thousand Oaks: SAGE Publications, Inc., 2011), 1519. http://dx.doi.org/10.4135/9781412994248.n576.

[16] Stuart Walker, *Sustainable by Design: Explorations in Theory and Practice* (Oxon: Earthscan, 2006), 18.

[17] Xiaofang Zhan, Stuart Walker, Ricardo Hernandez-Pardo and Martyn Evans, "Craft and Sustainability: Potential for Design Intervention in Crafts in the Yangtze River Delta, China," *The Design Journal* Volume 20, Issue sup1 (2017): 2922. doi: 10.1080/14606925.2017.1352802.

Challenges and opportunities for studio-based craft and design (SBCD)

To divert slightly, and although to be discussed in greater detail elsewhere in this exegesis, it is worthwhile at this point offering a brief definition of SBCD. SBCD is a distinct yet related activity to industrial design. SBCD can be defined as an individual skilled worker with deep technical (hand, machine and digital) and material knowledge, rooted in the traditional aspects of a specific craft discipline, who works in a studio generally separated from markets and business constraints of industry. SBCD practitioners develop capacities that allow agility and flexibility to work independently (such as a studio) or collaboratively (within the realms of industry) to achieve a desired end. Often those practicing SBCD are referred to as a "designer maker".

SBCD possesses many qualities and attributes. As a vocation, however, it is often taught and practiced bound to past models that fail to sufficiently make links with salient issues. Perhaps this is the reason that over the last several years many educational programs that have supported SBCD across Australia have been discontinued or amalgamated into larger homogenous programs; the last decade or so has also seen a swag of cultural organizations move to drop "craft" from their titles; and there appears to be a decline of professional craftspeople.[18, 19, 20]

Despite what might appear to be a crisis not only in SBCD practice but also in relation to the proliferation of stuff, there is a gap and a positive contribution that can be made. Aside from elements of sustaining action, the value of SBCD is the critical agency afforded by a skilled individual whom is capable of performing 'micro interventions' into the flow of existing globalised materials. This is vastly different from industrial designers, for example, who are governed by industrial processes and business constraints and are not as agile and free in the same way as SBCD.

AIM 3

Tracking practice from an 'old' to 'new' model

This is where TRR comes in as a strategy for dealing with concerns of waste; within the field of SBCD, as a viable creative endeavour, it is not common practice. Those with deep material or technical knowledge already engaged with some form of creative process, such as SBCD, begins a conversation that provides a glimpse of a possible way forward. If it is acknowledged that design (action) and craft (making) is responsible for authoring the construction, altering and interaction of our built environment, SBCD has a capacity to shape our physical existence on this planet. SBCD is well placed to make a meaningful offering to material culture and as a tool to potentially slow down materiality to landfill—albeit on a very small scale—but as it currently stands it has to look beyond its own rote disciplinary boundaries.

This project makes this attempt, to shift from 'old' to 'new' practice. And the final aim of this project is to then track how the work produced via the studio transforms over the course of the research when engaged with these broad and universal problem settings. Using my own practice as the tool for inquiry and by developing strategies through RR as the means for engaging with waste, also tests the capacity and limits of practice.

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[18] In a report focused on surveying the creative industries in Australia, Throsby and Zednik state that: "The numbers of craft practitioners have continued their long-term downward trend…"
David Throsby and Anita Zednik, *Do you really expect to get Paid? An economic study of professional artists in Australia* (Sydney: Australia Council for the Arts, 2010), 19. Accessed 18 January 2014.
http://australiacouncil.gov.au/workspace/uploads/files/research/do_you_really_expect_to_get_pa-54325a3748d81.pdf.

[19] One of the key findings in the report *Mapping the Australian Craft Sector*, Heath and Pascoe write: "To support the future health of the sector, new models of working need to be explored…"
Liana Heath and Joe Pascoe, *Mapping the Australian Craft Sector* (Sydney: National Craft Initiative, 2014), 74. Accessed 16 September 2014.
https://gallery.mailchimp.com/198e0c90d7ed9366663b46f99/files/dc45d865-3d38-4762-8b18-ee254ced679e.pdf.

[20] Throsby and Petetskaya have noted that creative incomes have dipped: "When adjusted for inflation, average incomes have fallen by 4% since 2009".
David Throsby and Katya Petetskaya, *Making Art Work* (Sydney: Australia Council for the Arts, 2017), 18. Accessed 18 December 2017.
http://www.australiacouncil.gov.au/workspace/uploads/files/making-art-work-companion-repo-5a05105696225.pdf.

WHAT THE PROJECT IS ABOUT

Brief summary

In summary, the motivating aims of this project are: Firstly, to adopt a broader understanding of design. Secondly, to question the ethical implications of practice in a time of unprecedented waste production. And thirdly, for SBCD to be relevant and timely requires redirection from default and out-dated models that fail to adequately respond to a rapidly changing and complex world. This project seeks to address this gap.

I use SBCD as tool for inquiry into a) concerns of growing waste and the links to design; b) as a strategy for giving alternative values to goods that have been discarded; and c) as a practice that engages with social, cultural and ethical concerns when presented with issues outside of domestic disciplinary concerns.

In addressing these aims, this project develops an alternative strategy for SBCD that squarely faces the conundrum of making in a world already so full of stuff.

WHAT TO EXPECT IN THIS EXEGESIS

Part 1, Part 2, Part 3: An overview of chapters

This exegesis is written in chronological order. Each work that is produced is derivative of the previous works and grows in sophistication as thinking evolves and develops. I treat each work as a case study, discuss motivations, provide a synopsis and conclude with an evaluation against frameworks derived from the literature as the means of moving forward.

The paper is split into three parts. *Part 1* consists of three chapters. Chapter 1 begins with an overview relating to the crisis of stuff, the proliferation of waste and the challenges for moving toward sustainable outcomes. In Chapter 2, links are formed with waste and design. A need is identified for a significant change in redirecting models of design practice. This provides the foundation for Chapter 3 where complexities are discussed in detail that highlights the attributes and limits relating to SBCD practice.

The three literature reviews lead into *Part 2*. This section relates to practice. Chapter 4 is the first attempt at putting theory into practice in the studio through making furniture. This work is a commission for a private client, *Four Side Tables*, which uncovers some ideas around design's impact from an emotional and local perspective. However, my conclusion still ties it to an old model of practice. Recognising that I had to take a far more experimental and expansive approach, I then take a severe diversion to engage directly with the waste stream. In Chapters 5 and 6, I discuss two separate works that are propositions and the vehicles for engaging and synthesising critical issues through design. One work is displayed in the gallery sector, *Stool Prototype #4*, and the other is a lighting commission, *Cloud*, for a cultural institution that touches on design as a political driver for change. It is in Chapter 7, however, when things really start to take shape. Here I discuss a solo exhibition *Crafting Waste.* This is when my practice truly starts to decouple from previous modes of operating. This case study focuses on furniture and objects in a domestic setting that additionally develops some ideas into the facilitative role and potentials of SBCD in generating socially inclusive and community-based outcomes through the reusing of objects. This leads into the final work, Chapter 8, a collaborative re-making and repair community-based project titled *Object Therapy*, which pushes SBCD further. This project revolves around community members submitting broken objects for creative repair, and a range of artists, designers and craftspeople performing those repairs, suggesting that TRR is applicable to creative practice. However, this requires a letting go of preconceived ideas of what objects can or should be and a breaking down of sole authorship and the notions of the twentieth century hangover of 'designer as star'.

Part 3 finishes this exegesis with a discussion of key points raised around what defines an alternative approach to practice. This research has opened up more questions than it has provided answers, so opportunities will be discussed in conjunction with an offering of where to next.

This research project has pushed and pulled my practice into very different directions: where I began to where I have ended up has seen unexpected outcomes. Thinking has expanded, and practice has transformed into a model of working never anticipated. The work presented in this exegesis shifts dramatically from making to re-making to community-based engagement.

PART 1: SOME THEORY

CHAPTER 1:
A CRISIS OF STUFF AND SUSTAINABILITY

Over the last century, the design, production and disposal of products have exponentially increased. In turn, this is causing serious threats to environmental, social, cultural, political and economic imperatives. This chapter highlights the sheer magnitude of this issue. Critical to the discussion is the ethical implications of putting more things in to the world; this underlies the theme of this project—'*why make more stuff*'—a line of inquiry counter-intuitive to conventional SBCD.

This chapter links the research project with both waste and sustainability. Sustainability has a long history yet it still warrants further exploration. As consumer society has become increasingly complex and interconnected, systems that enable consumption (and all the resulting negative impacts) have become ever more hidden from view. And despite sustainability becoming a widely debated focus for the 21st Century, many practices continue 'business as usual' in un-sustainable ways. There has been a considerable shift from a localised to a globalised flow of materiality. The need to track what things are made from, where they are made, and where they end up complicates the approaches towards sustainable action. This challenge presents an opportunity to increase awareness and address relevant systems (extraction, production, distribution, consumption, disposal) in order to understand the impact of residual effects of contemporary consumption, particularly waste. This perspective enables a re-situating of individual studio practices—practices historically rooted in making stuff—within the problematic context of stuff, waste and sustainability, three components inextricably linked to design.

This chapter is split into two sections: Part A discusses overconsumption and overproduction, and the clear links to an exponential growth in waste. Part B touches on our relationship with stuff and why we are seemingly attracted or forced to buying more things, and how this has also contributed to a crisis of waste.

PART A

A crisis of stuff

In 2014 the satirical online publication *The Onion* published an article titled "Report Confirms No Need to Make New Chairs For The Time Being". Simon Clouse, the report's alleged lead author, observed that:

> Even if every person decided to sit down at the exact same time, there would still be an adequate number of chairs to go around … As far as chairs go, we're basically set.[21]

While a spoof, this articulates a pertinent observation: considering the serious environmental challenges of our time, one must ask, "*what is the point of another new chair?"* With countless variations already in the world, what possible and useful contribution would another chair make? Would the many tree stumps remaining from clear felling of forests not make for quite adequate chairs? Does a rock make a suitable chair, albeit a little chilly at times? Or better still, would the ground make for a satisfactory chair? These examples do not require any skills or resources…

As an SBCD practitioner operating within the sub-genre of furniture and objects I have made many chairs, and even some appear within this research project. However, in the above, 'the chair' in this

[21] "Report Confirms No Need to Make New Chairs For The Time Being," *The Onion*, 15 July 2014, http://www.theonion.com/article/report-confirms-no-need-to-make-new-chairs-for-the-36470

context is merely an example through which to explore a wider discourse of the designing and the making of 'stuff'.

For example, it has been estimated that over the course of the 20th Century household possessions rose from 100 to over 20,000 things.[22] In 2014 the *LA Times* reported that an average American household has over 300,000 things.[23] Here in Australia we are witnessing a similar pattern that indicates the trend is systemic in developed nations. In the most recent report that covers the period of 1984-2015/16, The Australian Bureau of Statistics (ABS) has documented a significant rise in household spending in the only 'stuff' category of 'Furnishings, household equipment and services'.[24]

Robert Crocker's book, *Someone Else's Problem,* highlights that this rise in attaining stuff is a result of multiple factors: Cheap labour and materials, round-the-clock mass media input, and free-trade across globalised markets has made, in essence, getting stuff a whole lot easier. He notes that purchasing and disposing has become an almost "blasé" affair, which marks a significant shift in the acquisition of things. Nonchalant attitudes may have once been affordances of the wealthy, but the current access and availability has broken down accessibility factors and democratic barriers.[25] Although the interconnectedness of the world has opened up many new opportunities, current consumption practices are problematic. Crocker writes: "Because consumerism today requires such a rapid cycle of purchase, use and discard, it also results in premature wastage…"[26]

A crisis of waste

In the contemporary context, stuff begets waste, and this is a meta-problem. A 2012 report from The World Bank (WB) titled *What A Waste,* indicates that waste is a rapidly growing global problem. Rachel Kyte, WB Vice President and Head of Network Sustainable Development, sums up by noting that waste production from 2012 to 2025 is expected to almost double and will result in significant costs environmentally, socially and financially.[27]

The 2014 journal paper by Jagdeep Singh et al., *Progress and Challenges to the Global Waste Management System,* reiterate many of the issues associated with increasing global waste practices. They state:

> Tremendous amounts of new wastes are entering into the waste streams. Consequently, even countries with a relatively developed infrastructure for WM [Waste Management] face challenges to manage wastes sustainably for example, owing to (1) products that are not suited for recycling and (2) unsatisfactory waste sorting. Thus, it could be concluded that the overall WM is on an unsustainable trajectory still.[28]

Australia is not immune, and has been cited as one of the world's biggest consumers.[29] The ABS reported in 2010 that waste is escalating.[30] A more recent report, again from the ABS, relates yet another increase.[31] Programs such as the ABC television's Four Corners episode *Trashed: The Dirty*

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[22] Don Norman, *Emotional Design: Why we love (or hate) Everyday Things* (New York: Basic Books, 2004) as cited in:
Rohan Nicol and Craig Bremner, "Domestic Renewal: Resetting the Table and Repairing the Domestic," *Interiors* Volume 5, Issue 1 (2014): 58.
[23] Barry MacVean, "For Many People, Gathering Possessions is Just the Stuff of Life," *LA Times*, 21 March 2014, http://articles.latimes.com/2014/mar/21/health/la-he-keeping-stuff-20140322.
[24] "6523.0 - Household Income and Wealth, Australia, 2015-16," www.abs.gov.au, 13 September 2017, http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/6523.0~2015-16~Feature%20Article~Income%20Wealth%20and%20Expenditure%20Over%20Time%20(Feature%20Article)~100.
[25] Robert Crocker, *Someone Else's Problem: Consumerism, Sustainability and Design* (Oxon: Routledge, 2016), 1-10.
[26] ibid, 3.
[27] Daniel Hoornweg and Perinaz Bhada-Tata, *What a Waste: A Global Review of Solid waste Management* (Washington: The World Bank, 2012), 7. https://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1334852610766/What_a_Waste2012_Final.pdf.
[28] Jagdeep Singh, Rafael Laurenti, Rajib Sinha and Björn Frostell, "Progress and challenges to the global waste management system," *Waste Management & Research* Volume 32, Issue 9 (September 2014): 807. https://doi-org.virtual.anu.edu.au/10.1177/0734242X14537868.
[29] Atiq Uz Zaman and Steffen Lehmann, "Urban growth and waste management optimization towards 'zero waste city,'" *City, Culture and Society* Volume 2, Issue 4 (December 2011): 178. https://doi.org/10.1016/j.ccs.2011.11.007.
[30] The ABS reported that during 2006-07, Australians generated approximately 43.8 million tonne of waste. On average this was 2080 kilograms of waste per person. It has been estimated that only half of this total was recycled and from 2001-07, a 12% increase in landfill waste was recorded.
"Waste Statistics - added February 5, 2010," www.abs.gov.au, accessed 30 August 2012, http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4613.0Chapter40Jan+2010.
[31] An updated report from mid-2018 has documented a 23% increase in waste from 2006-07 to 2014-15.

Truth About Your Rubbish (2017) and the documentary series *War On Waste* (2017) have all highlighted current issues surrounding waste and its far-reaching negative effects. This growth in waste is evidently born from an escalation of producing, consuming and discarding more and more stuff.

Yet it is an inability to deal with stuff that creates major problems and causes knock-on effects. Recently, China made a ban on accepting some of Australia's waste. China, under its import legislations, is tightening up the import of contaminated materials.[32] 619,000 tonnes of waste that were being diverted annually now have to be dealt with back at local levels. In Queensland, Australia, the Ipswich City Council reacted to the China ban by deciding to no longer follow through with recycling programs stating it was going to be too expensive.[33] Ipswich City Council has since reneged on this decision after a flurry of media attention and public outcry.[34] This could also be construed as a stunt to leverage off a world-wide political issue and to spark a national debate around the responsibilities and ethical issues relating to waste practices.

This implies that an interconnected world of stuff creates a significant impact not only on the planet, but also to the many structures that govern and support populations. When one considers the cascading effects of acquiring new things, further sets of questions arise surrounding the responsibilities of ownership, stewardship and discard practices. At the crux of the discussion is the question of sustainability and how issues of developing 'sustainable' practices can be addressed when it appears the world is producing more and more stuff, and rapidly drowning in that stuff.

Sustainability is so not new

Although resurgent as a widely debated topic, the concept of 'sustainability' is not without precedent. The seminal report *Our Common Future* (1987) by the World Commission on Environment and Development (often referred to as The Brundtland Report) published: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[35]

Yet this notion of sustaining human existence and reduced environmental impact has ancient roots. In 200 B.C Roman theologian Quintus Septimus Florens Tertullianus expressed his concerns:

> One thing is for sure. The earth is now more cultivated and developed than ever before. There is more farming with pure force, swamps are drying up, and cities are springing up on unprecedented scale. We've become a burden to our planet. Resources are becoming scarce, and soon nature will no longer be able to satisfy our needs.[36]

During the 13th Century, German theologian Meister Eckhart also identified humans adversely affecting the environment.[37] In the late 19th Century, Russian scientist, zoologist and philosopher Peter Kropotkin also expressed his environmental concerns. In *The Conquest of Bread* (1892), he observes that, in regard to economic growth through the production of stuff, most economists identify production and progress the cardinal imperatives in the development of wealth. Kropotkin offered an alternative approach—first identify people's needs, then find the most appropriate mode of production. He considered his approach a "science", defined as: "The study of the needs of mankind, and the

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"4655.0 - Australian Environmental-Economic Accounts, 2016," www.abs.gov.au, last modified 15 June 2018, http://www.abs.gov.au/ausstats%5Cabs@.nsf/0/9EF05B385442E385CA257CAE000ED150?Opendocument.

[32] Jenni Downes and Elsa Dominish, "China's recycling 'ban' throws Australia into a very messy waste crisis," *The Conversation*, 27 April 2018, https://theconversation.com/chinas-recycling-ban-throws-australia-into-a-very-messy-waste-crisis-95522.

[33] Felicity Caldwell, "Ipswich dumped recycling in landfill for 4 weeks before going public," *Brisbane Times*, 19 April 2018, https://www.brisbanetimes.com.au/politics/queensland/ipswich-dumped-recycling-in-landfill-for-4-weeks-before-going-public-20180419-p4zagh.html.

[34] Natasha Christian, "Ipswich Council to Stop Dumping Recycling in Landfill After Backlash," *SBS News Australia*, 20 April 2018, https://www.sbs.com.au/news/ipswich-council-to-stop-dumping-recycling-in-landfill-after-backlash

[35] "Report of the World Commission on Environment and Development: Our Common Future," www.un-documents.net, last accessed 15 August 2018, http://www.un-documents.net/our-common-future.pdf.

[36] Bruce Mau, Jennifer Leonard and The Institute Without Boundaries, ed., *Massive Change* (New York: Phaidon Press Inc., 2004), 45.

[37] Jonathan Chapman and Nick Grant, ed., *Designers, visionaries and other stories: a collection of sustainable design essays* (Oxon and New York: Earthscan, 2007), 3.

means of satisfying them with the least possible waste of human energy".[38] In conjunction with this, Kropotkin also called for more robust objects and the restoration of the natural environment post-industrial development.[39]

In the latter part of the 20th century, seminal environmental writings including Rachel Carson's *Silent Springs* (1962) and the economist/environmentalist Barbara Ward's *Spaceship Earth* (1966) foregrounded the environmental movement of the 1970s. Ward subsequently wrote *Only One Earth* (1973), published in *The UNESCO Courier*, in which she cites the oceans as, "one giant cistern without an outlet".[40] Ward was referring to the residual effects of under-regulated production, consumption, and disposal of stuff. Some 45 years later, current statistics estimate that there are approximately 8 million tonnes of plastic entering the ocean every year.[41, 42]

At the time, also contributing to the public discourse, architect, designer and inventor R. Buckminster Fuller argued for urgent consideration of resource use, to 'do more with less'. In *Operating Manual for Spaceship Earth* (1969), Fuller continues with Ward's analogy of earth as a spaceship, and humankind as astronauts dependent on surviving in a closed system. 'Space Ship Earth' therefore demands a considered approach to resource use and waste in order to sustain human life. Fuller comments, "…up until now we have been mis-using, abusing and polluting…"[43]

During the 1970s environmental movement, a debate between American scientists Barry Commoner, Paul Ehrlich and John Holdren resulted in developing an equation to describe exacerbating human impacts on the environment, the IPAT formula (I = P x A x T). The variables being Environmental Impact (I), Population Increase (P), Affluence (A), and Technology (T). The formula expresses that as population, wealth, and technology each increase, the resulting environmental impact is a compound multiple. The purpose of the IPAT formula is to show the fundamental drivers behind environmental change by highlighting that impact is not isolated to a single or independent factor, but rather the resultant of a series of interconnected and complex forces.[44]

Hidden from view

This proliferation of stuff—production and consumption—forms the backbone of many developed economies. Economics focuses on supply and demand, wherein growth is underpinned by increased production/consumption. In his book *The Great Disruption: How the Climate Crisis will Transform the Global Economy,* international sustainability advocate and expert Paul Gilding raises the question: "What would happen if we all stopped shopping?"[45] He suggests that if America stopped buying from China, then China would stop manufacturing for America, and then Australia would stop selling its finite natural resources to China.[46] This hypothetical chain reaction would have massive global impacts. However, this scenario would require an improbable meta-shift in consumer behaviour, corporate strategy, and government policy from major global players (America, China, et. al).

Gilding's statement presents an interconnected world with reliance on many externally moving parts. In this complex system of production, consumption and disposal, many transactions are hidden from view. In the contemporary context, 'stuff' can rapidly loose perceived value, instantly transform into 'waste', and easily be chucked into a bin; yet all of the embodied energy captured in natural resources, labour, transportation and disposal exists under the visible surface. The true costs of

[38] Peter Kropotkin, *The Conquest of Bread* (New York: Vanguard Press MCMXXVI, 9 November 2007), 68-69. EBook #23428. https://www.gutenberg.org/files/23428/23428-h/23428-h.htm
[39] ibid.
[40] Barbara Ward, "Only One Earth." *The UNESCO Courier*, 1973, http://unesdoc.unesco.org/images/0007/000748/074879eo.pdf (accessed 23 July 2013).
[41] 'Oceans of Plastic', *Four Corners,* Australian Broadcasting Corporation, 27 February 2017, television broadcast.
[42] The Senate Environment and Communications References Committee, *Toxic Tide: The Threat of Marine Plastic Pollution in Australia* (Canberra: Commonwealth of Australia, 2016), 10.
[43] R. Buckminster Fuller, *Operating Manual for Spaceship Earth* (Zurich: Lars Muller Publishers, 1969), 59.
[44] Richard York, Eugene A. Rosa and Thomas Dietz, "STIRPAT, IPAT and ImPACT: analytic tools for unpacking the driving forces of environmental impacts," *Ecological Economics* Volume 46 (2003): 352.
[45] Paul Gilding, *The Great Disruption: How the Climate Crisis will Transform the Global Economy* (London: Bloomsbury Publishing, 2011), 203.
[46] ibid, 203–204.

things are levied someplace to someone or something, but not to the end user.

What is the mechanism that allows the seemingly blind consumption of more and more stuff while resulting waste has continued to rise exponentially? According to academic James R. Miller:

> More and more of us will soon live in highly modified, human dominated environments where nature is too often considered expendable and the ecological processes that sustain us are hidden from view.[47]

Jennifer Clapp also echoes Miller's point. In *The Distancing of Waste: Overconsumption in a Global Economy*, Clapp states too that there is an increasing disconnection regarding how and where stuff originates, where it ends up, and its potential impact. Afforded by a globalised and interconnected world, consumers are becoming ever more distanced from the results of their own actions, such as waste generated from buying, using and discarding. Clapp suggests that a widening disconnection from the waste that is generated from consuming, both geographically and psychologically, combined with the hidden nature of discard practices, further perpetuates the problem of more and more waste generated via "undesirable consumption choices"—stuff comes and goes to be dealt with by someone else, somewhere else.[48] In this current climate it does raise questions if escalating problems are being confronted and if there is enough progress toward the development of a sustainable future.

Beyond sustainability

Now that humans exist in the Anthropocene, and, as the example relevant to this research, the threatening proliferation of stuff, Fry suggests the need for a project that extends beyond notions of sustainability. Sustainable action as it currently stands is not making inroads into a world that has become concealed and un-sustainable. Fry refers to a counter project termed the 'Sustainment'. His studio, aptly named *The Studio At The Edge of The World*, explains this to be:

> This is not 'sustainability' with its propensity to sustain the unsustainable, seek means to be able to continue 'business as usual' and posit the problems to overcome as 'environmental'.
>
> In contrast, the Sustainment is a vital intellectual and pragmatic project of discovery marking a turn of humanity that acknowledges that 'to be sustained' requires another kind of earthly habitation that understands: the indivisible relation between creation and destruction; that nothing will change unless our mode of being changes; and that which has to change extends to every dimension of human environmental, economic, social, cultural and psychological existence. To grasp this is to comprehend that human 'development' to date has been bonded to an ever-increasing condition of unsustainability whereby human 'progress' has negated all the related conditions of 'our' dependence.[49]

PART B

Stuff and us

The context of consumer society regards most objects as expendable and easily replaceable (real costs are hidden). In addition to excessive overproduction and resulting waste, another reason we throw things away is loss of perceived (emotional) or actual (functional) value; stuff may be discarded, for example, when it no longer reflects current fashion trends or our self-image. This is the result, as noted by Peter Dauvergne in *The Shadows of Consumption*, of an interconnected global political

[47] James R. Miller, "Biodiversity conservation and the extinction of experience," *TRENDS in Ecology and Evolution* Volume 20, No 8 (August 2005): 431.
[48] Jennifer Clapp, "The Distancing of Waste: Overconsumption in a Global Economy," in *Confronting Consumption*, ed. Thomas Princen, Michael Maniates and Ken Conca (Cambridge: MIT Press, 2002), 158.
[49] "The Studio at the Edge of the World," www.thestudioattheedgeoftheworld.com, accessed 24 January 2018, http://www.thestudioattheedgeoftheworld.com/the-sustainment.html

economy that has the capacity to dictate "options" for consumers. These so-called "choices" are shaped through complex elements such as global policies and institutions, activist sub-cultures, the development of new technologies, advertising and cultural shifts. Together these components have a direct influence on what, how and why a global market place consumes. Dauvergne writes: "People buy things for many reasons: need, habit, belief, desire, fear".[50]

Take the domestic space. Our dwellings are personal, private and emotional spaces; functions of shelter and comfort intersect with a range of interpersonal situations amongst co-habitants. Our dwellings are also public spaces, open to visitors or neighbours. As such, they signify our identities, values, beliefs and aspirations.[51] As the world changes, as culture changes, and as we change, our domestic spaces are often updated to reflect those changes.

In relation to the broader context of material things Daniel Miller makes the point that a house can also be classified as stuff, albeit just a bigger version.[52] And like the stuff that flows through the home, our houses themselves are in transient states. The explosion of television series focussed on renovation (for example: *The Block, House Rules, Reno Rumble*) has helped spur 'DIY' amateur renovators to alter their domestic spaces at will. While new opportunities arise for businesses such as hardware chains and home furnishing multinationals, there are also repercussions. The *Sydney Morning Herald* reported that home renovation shows have helped to drive a housing bubble for Sydney and Melbourne's housing markets as consumers take advantage of low interest rates and quick, easy access to finance.[53] Furthermore, this cultural trend to constantly update stuff and home triggers spiralling repercussions evinced in a deskilling of workers paired with climbing demand for new things that systematically produces more waste.

Stuff and mass media

Mass media can be a powerful driver of cultural and social change. A primary advertising strategy is to suggest the stuff we have is no longer up to par. Academic Bianca-Marina Mitu notes, "Television is one of the most prevalent media influences in peoples' lives".[54] Entire rooms are designed around televisions, now fixed features in nearly every home.[55] As TV is widely accessible, it is an effective way of delivering layered content that influences a fixed audience.

Crocker makes this comparison:

> The escalation in consumerism … has two dimensions: a 'vertical' one … where someone rapidly replaces a product with a new version of the same … and a horizontal one, where the new product generates replacements in visually or materially related zones, sometimes in several domains at once … Many young couples about to be married, inspired by TV programmes like *Grand Designs*, will plan not only to buy a new house, but also to buy new furniture and other goods to make the interior 'match' the house. This consumerism encourages a horizontal as well as a vertical upgrading of possessions.[56]

Parallel to this discussion is the notion of human 'needs'. In *Designing Things* Prasad Boradkar notes that in the context of a consumerist society—beyond absolute basic human necessities fundamental for human survival such as food, clothing and shelter—lie other philosophical considerations

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[50] Peter Dauvergne, *The Shadows of Consumption: Consequences for the Global Environment* (Cambridge: MIT Press, 2008), 5.
[51] Mihaly Csikszentmihalyi and Eugene Rochberg-Halton, *The Meaning of Things: Domestic Symbols and the Self* (New York: Cambridge University Press, 1981), 121-130.
[52] Daniel Miller, *Stuff* (Cambridge: Polity Press, 2010), 81.
[53] Jared Lynch, "Too many home renovation shows for TV executives and Treasury to handle," *Sydney Morning Herald*, 1 June 2015, www.smh.com.au/business/media-and-marketing/too-many-home-renovation-shows-for-tv-executives-and-treasury-to-handle-20150601-ghe0ek.html.
[54] Bianca-Marina Mitu, "Television's Impact On Today's People And Culture," *Journal of Economics, Management and Financial Markets* Volume 6, Issue 2 (June 2011): 916.
[55] According to a survey conducted by the Australian Communications and Media Authority, an Australian government department, most Australian households have more than one television. The recorded mean is 2.2 sets per household (citation footnoted on page 20). "Television Sets in Australian Households 2011: Current stock and consumer expectations about replacing television sets," www.acma.gov.au, June 2012, www.acma.gov.au/-/media/Research-and-Analysis/Research/pdf/Television-sets-in-Australian-households-2011.PDF?la=en
[56] Crocker, *Someone Else's Problem: Consumerism, Sustainability and Design*, 107.

applicable to the constant acquisition and disposal of more and more stuff. Boradkar makes reference to “need by coercion”, which, like Crocker’s above sentiments, is the result of acquiring more things due to the pressure applied by advertising campaigns and mass media. Boradkar also suggest there is a “need by logic” that translates into the need to buy more things as a by-product of the initial purchase: “The purchase of a laptop computer creates the need for a mouse, and therefore a mouse pad, and an ergonomic rest and a wrist brace and so on”.[57] These ‘needs’ translate to more stuff that in turn convert into more waste.

IN SUMMARY: CHAPTER 1

The context of this discussion offers both a macro and micro view on ethical repercussions for designing and making stuff. The act of producing, consuming and discarding has wider impact that just the sum of its parts.[58] Providing an example such as a house or dwelling that considers how it has become just as expendable as the stuff that goes in it—stuff which, in turn, regularly gets put out on bin nigh—serves to locate my own practice within a broader ecology. Although SBCD is a small-scale individual endeavour, posing the big question of why domestic spaces, and by greater extent urban settings, are constantly in flux establishes the research context.

What has been identified in this chapter is a crisis of stuff, the lack of systems to deal with that stuff and how this is significantly impacting on the broader systems that support human life. The problem as it appears is the negative effect that comes with jettisoning that stuff when it no longer serves its so-called intended function or loses its perceived value. This is about the matter of disposability, a burdening issue for our time. Having things and then throwing them away might be ok if it were part of an infinite cycle of recyclability that had no impact on the environment. Unfortunately, this is not the case. In-built obsolescence; lack of workmanship and quality; changing technological devices; once-only use; shifting trends and a quick buck: the world of stuff changes so rapidly that this constant turnover often leaves us with the ‘death’ of our possessions. The built environment and our domestic spaces bear witness to a transient flow of permanent materials applied to impermanent or throwaway applications.

This chapter has raised the ethical implications of yet making more things. Although much of what has been highlighted is derivative of industrial and globalised manufacture, this is still a conundrum for SBCD because as a vocation its current principle endeavour is the designing and making of more stuff. This begs the question of what alternative strategies exist within this paradigm and how then this might manifest in practice.

What has also been highlighted in this discussion is the hidden and constantly shifting impacts of current consumption patterns and how this is further perpetuating un-sustainable practices. Through highlighting the hidden costs and protracted impacts associated with the ubiquity of everyday objects, this starts to build an increased ‘awareness’ of issues that reside beyond a singular object—an object’s impact is greater that something that gets used and discarded.

There are clear arguments to the crisis of stuff and waste. In the next chapter it will be recognised and discussed that there is also strong links to design. Design practice requires a shift if it is to remain relevant and responsive to these salient concerns.

[57] Prasad Boradkar, *Designing Things: A Critical Introduction to the Culture of Objects* (New York: Berg, 2010), 161.
[58] Mihaly Csikszentmihalyi, “The Costs and Benefits of Consuming,” *Journal of Consumer Research* Volume 27, No. 2 (September 2000): 267-268.

CHAPTER 2:
A CALL FOR 'NEW' PRACTICE AND RE-EVALUATING DESIGN

Design is a powerful tool in how the world is shaped. As it currently stands, however, the practice of designing and making is still largely tied to lingering 20th Century Modernist ideals that insufficiently link with an increasingly complex world. From the following discussion, it is suggested that design could turn attention to dealing with concerns of waste—that which already exists—considering, as to be highlighted, waste is both an issue of and for design. Given SBCD promotes high-level practical skills, considerable material knowledge and an engagement with a creative process, it is a well-placed endeavour to make small-scale offerings to practices of reuse and repair as a design strategy for slowing down waste to landfill by keeping stuff in circulation.

In this chapter, a discussion emerges around an identified need to broaden an understanding of design and how it might be reconciled in practice. This highlights that a) design requires establishing an alternative practice; b) design is part problem and part solution, an act of cause and effect; and c) as the world changes, design's role is to respond to these changes.

Design and the connection to stuff

The revolutionary designer, critic and author Victor Papanek wrote in 1971 that:

> ...By creating whole new species of permanent garbage to clutter up the landscape, and by choosing materials and processes that pollute the air we breath, designers have become a dangerous breed.[59]

Although a damning statement, Papanek's quote acts as an important reminder that design practice has an ethical dimension. This relates back to that world of stuff, and to the making of stuff, as the design, production and the eventual disuse of something has far greater effects than just a physical object.

In the paper *A New Design Ethic for a New Reality*, JohnPaul Kusz states that waste should be utilised as an asset that has potential to be redirected into other possible sources of capital. Kusz notes that instead of waste being part of a "resource management strategy", it has far greater value and should be included in an "asset management strategy". This, however, requires a circular view of design and a switching from current 'produce, consume, dispose' linear approaches. Kusz writes that creative activity through design also has the potential to eliminate waste.[60]

An article published by *The Economist* titled "The Truth About Recycling" sums up this point. Kate Krebs, Executive Director of America's National Recycling Coalition is quoted in the article as saying: "waste is really a design flaw".[61] This serves to reiterate Kusz's point in that a holistic understanding of design will play a key role in transitioning toward an approach that sits as an alternative to a world so full of stuff. In essence, this is about *how* we design and the broader impact of making something even if only a very small scale (like SBCD).

Perhaps it should be acknowledged that as a designer, at some point into the near or distant future those things born from design will get consumed and, inevitably, will join a transient global flow of material. Where designed stuff ends up, only time will tell, but that swell in 'permanent garbage' cannot be denied.

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[59] Victor Papanek, *Design For the Real World: Human Ecology and Social Change* (London: Thames & Hudson, 1971), ix.
[60] JohnPaul Kusz, "A New Design Ethic for a New Reality," in *The Handbook of Design for Sustainability*, ed. Stuart Walker, Jacques Giard and Helen L. Walker (London: Bloomsbury Academic, 2013), 308-310.
[61] "The Truth About Recycling," *The Economist* Volume 383, Issue 8532 (9 June 2007): 24.

Design and unsustainability

Sustainable design-action has often been attributed to, for example, the development of efficient processes to reduce energy use, a focus on recyclable or alternative material choices, or making assessments of a product's full lifecycle to minimise negative impacts. As noted by Walker, although these aspects are contributors to 'better' practices, they are, however, still inadequate.[62]

Michael Braungart and William McDonough, authors of *Cradle to Cradle,* reiterate Walker's point. They suggest that switching one process or material out for one slightly better, as a whole, does not make it better: "…reduction in any of these areas does not halt depletion and destruction—it only slows them down, allowing them to take place in smaller increments over a longer period of time".[63] Attempts at 'eco-efficiency', defined as the production of competitive goods and services that have supposed minimal environmental impact—albeit as they note is a noble endeavour—being 'less bad' still does not fully address the embedded roots of a designed system so heavily tied to economic structures of constant growth through production, consumption and disposal.[64]

Walker also suggests an object's aesthetic can be telling of unsustainability regardless of how or what it has been made. As such, he has devised a series of identifiers:

a) "Culturally neutral or bland": homogenous products designed to be accepted on a mass scale across the world and as such fail to speak of social and cultural contexts specific to place;

b) "Pristine, polished and fragile": forms that require considerable intensive processes to achieve blemish free surfaces that when scratched or damaged, results in a dissatisfied user who discards for new. These objects also require significant packaging;

c) "Concealing and disguising": forms that have little connection to the inner workings of the object which results in a lack of understanding toward that object and therefore lack of connection;

d) "Cold or remote": unfamiliar materials that act as further barriers toward the perceived value of things ultimately increasing levels of disposability, again, due to a lack of connection;

e) "Curved, rounded and smooth": forms that can be easily and cheaply produced via mass-manufacture techniques, often being manufactured offshore in nations where wages are low;

f) "Fashionable and showy": products that follow trends and become quickly obsolete through colour or form changes, therefore out-dated. These products are made from permanent materials that pose problems for disposability that further highlight practices that are irresponsible and damaging;

g) "Complete and inviolable": which translates to the overall perception of the object (form, finish, material) being passively accepted by the product user and due to the above points, cannot be maintained, repaired or cared for.[65]

Walker's overview may focus on industrial products but there are links to SBCD—neutral, polished, concealing, remote, smooth, showy and inviolable. Objects exuding "physical descriptions", as Walker puts it, serve to highlight their contributions to unsustainable practices.

Design requires a change

Walker's sentiments are captured under Fry's broader perspective of design and sustainability, as noted toward the end of the previous chapter. Fry has a sharp dig at sustainability's 'business continuing as usual' approach. Current systems still perpetuate unsustainable practices even if processes are replaced with something slightly better, as supported by Braungart and McDonough's observations.

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[62] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 79.
[63] Michael Braungart and William McDonough, *Cradle to Cradle: Re-making the way we make things* (London: Vintage Books, 2009), 54.
[64] ibid, 61-62.
[65] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 116-119.

Fry's overview of a much larger project hinges off a very different perspective of existing in the world—the 'Sustainment'. Currently, however, humans are propelling toward a "de-suturing condition".[66] This position, collectively, is hampering 'our' futures, and, if there is to be a future—one that radically changes worldly habitation to counter rapid depletion and destruction of the very place that sustains human existence—it will be through the re-directive praxis of design. Fry states that design thinking and ethics need to change, and design needs to define itself "a new practice".[67]

Victor Margolin has also previously noted that design requires constant cultivation. In *Politics of the Artificial*, he states:

> Design will change as its practitioners develop a new consciousness. Broad proposals and visions are a stimulus to this process but cannot replace hard, sustained work of rethinking one's identity as a professional. What makes this process so essential right now is the clear evidence that older models of practice are not working.[68]

Yet what constitutes this 'new practice'? Like observations of sustainability, notions of design and how it is understood and practiced is not a recent call to arms. Papanek stated back in the 70s that designers needed to learn how to re-design.[69]

Design relevancy

The world-famous designer Yves Behar, founder of US-based design company *fuseproject,* would suggest design is about relevance.[70] Although this may be a designer's classic response to validate their profession, we do exist in a hyper-connected and rapidly changing world. The currency of design must shift per human needs. We also exist in a world facing environmental challenges like no other in history. Designer and author Bruce Mau has parallel sentiments to Behar. Mau states:

> Whether we caused climate change or not is irrelevant, the way we will solve the problem is to design new ways of living to accommodate our new scale. And we are a million miles away from that, and there is nothing but opportunity.[71]

John Ehrenfeld, former Director of the Massachusetts Institute of Technology Program on Technology, Business and Environment, reiterates the call for redirecting design. In the paper titled *The Roots of Unsustainability,* Ehrenfeld explicitly states: "Design is the only deliberate way out of the unsustainable…"[72]

It appears that design can either perpetuate or counteract unsustainability. Understanding design is central to this discussion.

Design is bigger than form follows function

At a basic level, design generally responds to a particular 'problem', 'need' or 'want'.[73] A solution then follows. From my previous experience with designing objects, from both an industry and studio perspective, a concept or form manifests based on initially identified parameters. Often this is prototyped, further resolved functionally and aesthetically, and then put into manufacture using specific tooling or materials sourced or developed to suit that design (locally or globally depending on cost effectiveness).

Fundamentally this aligns with the hallmark of 20th Century Modernist design: Design the desired solution in response to said need, want or 'problem' (function) and then manipulate materials or

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[66] Fry, *Design Futuring: Sustainability, Ethics and New Practice*, 1-5.
[67] ibid.
[68] Victor Margolin, *The Politics of the Artificial* (Chicago: The University of Chicago Press, 2002), 97.
[69] Papanek, *Design for the Real World: Human Ecology and Social Change*, ix-xi.
[70] Yves Behar, "Yves Behar: Designing for the Future," filmed November 2012 at Chicago Humanities Festival, Chicago, IL, video, 50:37, http://www.youtube.com/watch?v=D-2NrwdPcpI.
[71] Rory Hyde, *Future Practice: Conversations from the Edge of Architecture* (New York: Routledge, 2013), 35.
[72] John Ehrenfeld, "The Roots of Unsustainability," in *The Handbook of Design for Sustainability*, ed. Stuart Walker, Jacques Giard and Helen L. Walker (London: Bloomsbury Academic, 2013), 25.
[73] William Henry Mayall, *Principles in Design* (London: The Design Council, 1979), 9-10.

processes to suit (form). In other words, "form follows function".[74] At the heart of the process is the imposing of a creative vision and authorship on to materiality.

The notion of "form follows function" still lingers as default design practice. In the book *Radical Matter: Rethinking Materials for a Sustainable Future,* Professor Carole Collet states: "For too many and for too long, design has been first and foremost associated with a styling exercise led by creative tensions between aesthetic and function".[75] Collet further comments that during the 20th Century the profession of design became blinded by consumerism and at the service of turning profits to ignore responsibilities of practice within a broader interconnected ecology.[76]

Pop culture definitions also perpetuate past mantras. For example, when 'design' is typed into *Google* two straightforward and relatively simple definitions are offered:

1. A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.
2. A decorative pattern.[77]

This interpretation suggests that the action of design is a relatively innocuous and benign activity defining it essentially as a form of mark making. There is also the claim of "look and function," an obvious reference to modernist ideals.

In the 21st Century, collectively we are witnessing the continuing transformation of our environments and how we exist within them. This includes issues of environmental degradation, rapidly evolving digital technologies and other urgent concerns such as resource exploitation, and the negative repercussions from a proliferation of stuff. As the world has become increasingly industrialised, globalised and interconnected, to follow past models is fraught. Walker suggests of previous design movements: "The issues and agendas to which they were responding are not our issues and agendas".[78]

Design fact

It appears that over time the description of design has shifted dramatically. In an exploration of the etymology of design, academic and author Kosta Terzidis uncovers that the Latin interpretation translates to the culmination of something derivative of a 'fact'.[79] A seemingly simple definition such as this is fitting for a world full of stuff and resulting waste—waste is a fact. The world of stuff is the product of design, which, as has been covered, is a pressing problem; and waste is inextricably linked to design and presents itself as both an issue of and for design. The 'fact' in this equation is the recognition that a physical manifestation of an idea or solution—a form that functions—has opposing consequences.

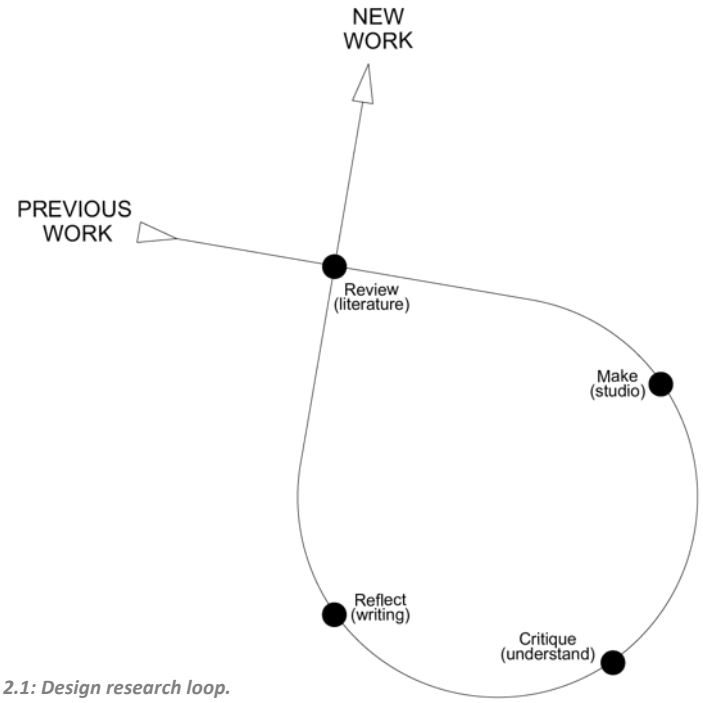
McDonough's perspective is that, "design is the first signal of human intention..."[80] He further adds, "…and if our intention is to destroy the planet, we're doing a great job".[81] There are overlaps of 'intent' that parallel Papanek's earlier 1970s notions of design as a fundamental activity underpinning human activity.[82] These definitions being driven by an intentional means also have ties to 'fact'. A fact is

[74] This phrase has often been attributed to 19th Century sculptor Horatio Greenough who is cited to have written extensively around how beauty was a promise of function. Although there is debate over whom this phrase should be attributed to, Modernist architect Louis Sullivan more famously stated: "…form ever follows function, and this is the law". This has since become an ongoing mantra for Modernist design. Susan Lambert, *Form Follows Function? Design in the 20th Century* (London: Victoria and Albert Museum, 1993), 7-14.
[75] Carole Collet, "Design Is Dead. Long Live Design," in *Radical Matter: Rethinking Materials for a Sustainable Future,* ed. Caroline Till and Kate Franklin (London: Thames & Hudson, 2018), 7.
[76] ibid.
[77] Google.com, accessed 20 June 2015.
[78] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 9.
[79] Kosta Terzidis, "The Etymology of Design: Pre-Socratic Perspective," *Design Issues* Volume 23, No. 4 (Autumn 2007): 69.
[80] "Design Approach," http://mcdonoughpartners.com/, last accessed 15 August 2018, http://mcdonoughpartners.com/design-approach/.
[81] Jim Witkin, "Upcycling: making design effective, sustainable and values driven," *The Guardian*, 2 May 2013, https://www.theguardian.com/sustainable-business/upcycling-design-sustainable-values.
[82] Papanek, *Design for the Real World: Human Ecology and Social Change*, 322.

something that is true or known and an intention manifests into something tangible, which, also, becomes a known.

Design is a conundrum

Design is a process. To understand design—and the impact this makes on the world—requires practitioners engaging with the process of design.[83] This is not a linear or straightforward transaction. Being driven by an action of design inquiry does not make for predetermined work; one work leads onto more work that then leads onto more work. Thinking becomes more sophisticated, works shift in response to the previous outputs and with that brings increasing complexity (Figure 2.1).



2.1: Design research loop.

In 1971 Horst Rittel observed that design does not hold right or wrong answers, no solution is "correct or false". In fact, every possible design solution then leads onto other solutions, which inevitably become more and more problematic. This brings new problems, meaning no actual end points only increasing complexities.[84]

Rittel, alongside Melvin Webber, went on to expand complexity theory in 1973 by developing the now-classic "wicked problem". They identified the idea of benign and wicked problems by stating that benign problems are clearly defined and generally have a clear solution with a stopping point, such as a basic mathematical problem. In contrast, they identified that wicked problems are messy with no stopping point because the solution will often lead to other problems as a by-product of the initial action.[85] As an example, this practice-led research project essentially could go on forever (which it probably will). This could be defined as a wicked problem.

However, in the journal article *The Origins of 'Wicked Problems',* Andrejs Skaburskis reminds us that Rittel also pointed out: "Designers are responsible for their own work".[86] Given the state of the world and the impact of human habitation and how there are links to design, design-related practice

[83] Poul Bitsch Olsen and Lorna Heaton, "Knowing through design" in *Design Research: Synergies from Interdisciplinary Perspectives*, ed., J Simonsen, JO Naerenholdt, M Buscher and JD Scheuer (Oxon: Routledge, 2010), 81.
[84] Horst W. J. Rittel, "Some Principles for the Design of an Educational System for Design," *Journal of Architectural Education* Volume 25, No. 1/2, Research as an aspect of Architectural Education (Winter-Spring 1971): 19-21.
[85] Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* Volume 4, No. 2 (June 1973): 155-169.
[86] Andrejs Skaburskis, "The Origin of 'Wicked Problems,'" *Planning Theory & Practice* Volume 9, Issue 2 (June 2008): 278. doi: 10.1080/14649350802041654.

requires ethical dimensions. This is a conundrum as designing and making stuff has effect—a world full of stuff. Yet as noted by Fry and others, design is a mechanism for change. As an applied action, design therefore has the potential to either be part problem or part solution, an interesting and paradoxical position for a designer.[87] This is problematic; there are 'facts' of cause and effect in every action and increasing complexities to be recognised and understood.

As a conundrum, how then is design reconciled in practice and what other potential alternatives exist other than perpetuating a world so full of stuff?

Design making-do

Historically human impact was significantly less in comparison to how the proliferation of stuff has sped up tenfold over the course of the last century. Fry suggests: "…we need to cultivate the ability to identify and extract design and sustainment principles from historical material and then transpose them into appropriate futuring forms".[88]

In the face of issues and concerns derived from stuff, designing something new, sourcing materials globally to suit and developing specific manufacturing processes or tools—along with the chain of transport and distribution that accompanies this—might very well need to be shifted. In response to Fry's statement, one such example of extracting principals from historic material is the notion of 'making-do'—that is, utilising that which is on hand. This is not new; cultures throughout time and across the world have practiced the transformation of existing things into 'new' items of necessity due to scarcity or accessibility barriers. Many cultures still perform this as a sustaining practice and as a matter of survival.

Jugaad, exercised in India, is described in *Jugaad Innovation* as a process that is "practiced by almost all Indians in their daily lives to make the most of what they have".[89] Jugaad is the art of frugality, improvisation, innovation and creativity. Akin to Buckminster Fuller's 1960s call 'to do more with less', Jugaad is primarily a practice that exercises human ingenuity by making use of existing resources and materials.[90] This is in opposition to that of technological progress exercised by developed nations in the push for constant economic growth from which so much stuff and waste is generated.

Another example is the work of artist and designer Ernesto Oroza. His ongoing project "Technological Disobedience," is a response and documentation of Cuba's propensity for adaptive reuse and repair in the face of economic crises.[91] During the 'Special Period in Time of Peace', a euphemism for economic collapse that was a repercussion from the demise of the Soviet Union in 1991, Cuba lost the majority of its goods, services and oil (the USSR was the primary source). Repercussions were severe and affected every person and every sector in Cuba. This included agriculture, medical supplies and material possessions. As Oroza notes, "As crises became more severe, people's creativity grew more powerful".[92] One specific example is the use of throwaway aluminium meal trays adapted as TV antennas. These objects sparked what can only be described as a national design language. The specific configurations of the trays vary from location to location but the utilisation in their original tray-form has been adopted across the country.[93]

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[87] Niklavs Rubenis. 2015. "Crafting Waste: A Re-evaluation of a Furniture Practice." In *Proceedings of Unmaking Waste Conference*, Adelaide, 2015. Adelaide: Zero Waste SA Research Centre for Sustainable Design and Behaviour, School of Art, Architecture and Design, University of South Australia. http://unmakingwaste2015.org/.
[88] Fry, *Design Futuring: Sustainability, Ethics and New Practice*, 157.
[89] Navi Radjou, Jaideep Pabhu and Simone Ahuja, *Jugaad Innovation* (San Francisco: Jossey-Bass, 2012), 4-5.
[90] Jaideep Prabhu and Sanjay Jain, "Innovation and entrepreneurship in India: Understanding jugaad," *Asia Pacific Journal of Management* Volume 32, Issue 4 (Dec 2015): 843-868.
[91] "Ernesto Oroza," http://www.ernestooroza.com/, last accessed 15 August 2018, http://www.ernestooroza.com/category/technological-disobedience-project/
[92] Ernesto Oroza, "Cuba's DIY Inventions from 30 Years of Isolation," filmed 2011 by Motherboard Radio, Cuba, video, 8:29, https://www.youtube.com/watch?v=v-XS4aueDUg.
[93] ibid.

The Cuban collapse was reciprocal. The demise of the Soviet Union also reduced access to manufactured goods. The text *Home-Made: Contemporary Russian Folk Artefacts* by Vladimir Arkhipov, documents some 220 individual items made by everyday people. Ranging from broken shovels remade into crutches to musical instruments constructed using discarded materials, each object embodies a make-do approach. Susan B. Glasser from the *Washington Post* notes:

> As Russia tentatively enters the world of global consumerism, Arkhipov's 'thingamyjigs' tell the story of it's Soviet past—and the wrenching years since the Soviet collapse, when the items of capitalist commerce started to become available in Russia, but were still largely unobtainable by the country's impoverished millions … They are also just plain clever, in the quirky personalised way of inventions meant to serve their maker and not a marketing department.[94]

In Australia, it has often been heralded as a country that adopts a similar attitude of being able to make-do. From an Anglo perspective only, it has been noted that historically traditional crafts were important survival skills in the face of harsh necessity.[95] Russel Ward's famous Australian myth of the pragmatic bushman is another example: "…a practical man … a great improviser".[96]

These examples lay precedent to maximising resources through reusing and repairing as a matter of survival. In a contemporary context, this approach has the means to potentially counter the impact that comes with producing and consuming more and more new stuff.

Design local

A thread that exists in making-do—an underlying component prevalent in the above examples—is local engagement. At a basic practical level sustainable action calls for the return to local resource use.[97] Benefits include the deceleration of environmental impacts such as carbon footprints and waste created by the transportation of globalised goods. Employing regional resources also has the value of stimulating a local economy. In turn this can create resilience to variations in global commodity prices or markets promoting less reliance on external forces. Aside from material and economic benefits, localism also offers a connection back to community.[98] However, an exclusive local return may be problematic considering the expansive choice, cost and ease of procurement offered by a highly complex and quickly evolving contemporary interconnected globalised world. Not to mention the sheer opportunities that this has created.

Yet there is fortuity in local engagement—and that is viewing waste as a low-capital asset ripe to be harvested for creative making-do. Local level involvement also promotes 'awareness' by illuminating how discarded and discarding objects and materials has simply become another part of daily routines. Despite many human life-supporting structures becoming hidden, in the domestic and urban environments residual signs exist everywhere. Gay Hawkins makes the comment that, "When waste is noticed something shifts in the mundane landscape of domestic habits".[99]

Design and reuse and repair

Fry writes that a major imperative of countering unsustainability is:

> The retrofitting of the material world made so far (the actual scope of this task is huge and currently obscured by the ongoing creation of ever more things, including 'green things' such as buildings and products).[100]

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[94] Vladimir Arkhipov, *Home-Made: Contemporary Russian Folk Artefacts* (London: FUEL Publishing, 2006), 9.
[95] Noris Ioannou, *Masters of their craft: tradition and innovation in the Australian contemporary decorative arts* (Sydney: Craftsman House G+B Arts International, 1997), 18-19.
[96] Russell Ward, *The Australian Legend* (Melbourne: Oxford University Press, 1958), 1-2.
[97] Jeremy L. Caradonna, *Sustainability: A History* (New York: Oxford University Press, 2014), 16-17.
[98] Economics of Happiness. Writ. Helena Norberg-Hodge. Dir. Helena Norberg-Hodge, Steven Gorelick, and John Page. ISEC Production, 2011. DVD.
[99] Gay Hawkins, *The Ethics Of Waste: How We Relate To Rubbish* (Maryland: Rowman & Littlefield Publishers Inc., 2006), 1.
[100] Tony Fry, *Design As Politics* (Oxford: Berg, 2011), 23.

Fry states that such a process will take a very long time of sustained and committed action. Given the embedded structural systems that perpetuate unsustainable actions, Fry proposes that to be effective in solving problems requires a direct engagement with the issue. Problems need to be confronted "…and currently they are not".[101]

Confronting problems of waste as an issue of and for design is a difficult task. Squarely facing one's practice as a problem, and one that potentially contributes to unsustainability through the blind making of more stuff, turns the very nature of practice on its head. To translate this into what Fry has suggested above, in relationship to SBCD, is to pragmatically intervene with that plethora of waste and stuff that already exists; a 'retrofitting of the material world'.

Walker backs this up. He states: "Making use of what already exists can be the basis of effective and more benign design".[102] He also reiterates many points previously made around the hidden impact of stuff and the opportunities through engaging on a local level. Yet what Walker suggests further is that the very act of designing also has the capacity to either hide or reveal depending on the methods and approaches employed. Also, when resources are viewed as scarce, reusing or repairing discarded things is an approach applicable and adaptable for design. Inventiveness and creativity are spawned (as evident in the making-do examples) and potentials arise to elevate seemingly value-less objects.[103] In doing so, this process can also symbolise other concerns that exist beyond that object's physicality.

In conjunction, Crocker puts forth:

> Reuse is thus not just about its more obvious environmental, economic and social benefits, but also about the revalorisation that seems to occur in the mind of the consumer … [the reused object] defies the rapid decline in value … For being unique, or almost so, it cannot be easily replaced. It is symbolically sustainable, since it has persisted, and will persist, so long as it is chosen and valued.[104]

There are other benefits in regard to switching to a design-focus on existing materiality. As illustrated by Figure 2.2, reuse drastically reduces the number of steps in the cradle to grave process and the associated energy consumption and waste costs. McDonough and Braungart make parallels in *The Upcycle: Beyond Sustainability-Designing for Abundance.* In relationship to waste generated through every step of an object's life cycle, the reusing of something that has reached 'final disposition'—that is, the stuff in the garbage—has to have further potential: "…products don't die and vanish. This is the problem and the opportunity. Products stay on and on and on … We need to get away from thinking of these objects as mutable or we won't consider their endless reuse".[105]

Reuse and repair afford other benefits. Picking up on McDonough and Braungart's passing point of 'opportunity' through engaging with existing and discarded materiality, authors Dr James Bradfield Moody and Bianca Nogrady draw similar conclusions. In their book *The Sixth Wave: How to Succeed in a Resource-Limited World* they state that we are currently entering into a new wave of innovation, the 'Sixth Wave'. Over the last two hundred and fifty years there have been five distinct periods of innovation known as the Kondratiev Waves.[106] Each wave of innovation brings with it massive change

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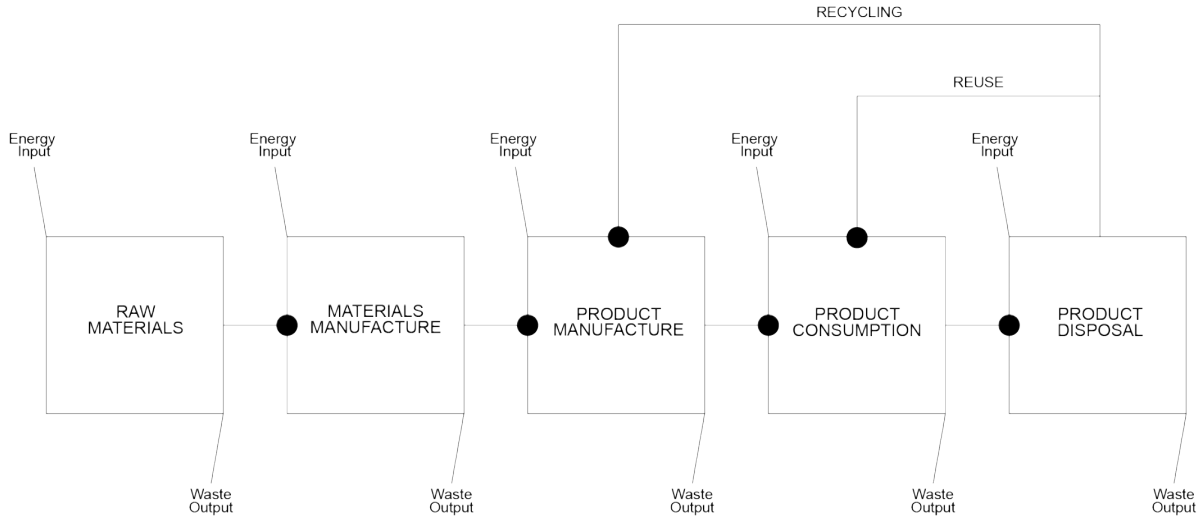
[101] ibid, 23-24.
[102] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 125.
[103] ibid 120-125.
[104] Robert Crocker. 2015. "Hyper-Consumption, Authenticity, Value and the Resurgence of Reuse." In Proceedings of *Unmaking Waste Conference,* Adelaide, 2015. Adelaide: Zero Waste SA Research Centre for Sustainable Design and Behaviour, School of Art, Architecture and Design, University of South Australia. http://unmakingwaste2015.org/.
[105] William McDonough and Michael Braungart, *The Upcycle: Beyond Sustainability-Designing for Abundance* (New York: North Point Press, 2013), 213.
[106] In brief, the first Kondratiev Wave (1780s-1815) was water power and the production of cotton and iron; the second wave (1848-1873) saw the beginning of the mechanisation of industry, development of steam power and railways; the third wave (1895-1918) produced heavy engineering, electrical equipment, chemicals and steel; the fourth wave (1941-1973) spawned from oil which resulted in an explosion of automobiles (including the likes of cars, tanks, diesel engines, aircraft), mass production, and the exponential development and use of synthetic materials; and finally the fifth wave (1980-2001) has seen the rapid development of communication, technology and global flows of information.

that then comes to an end as a result of economic turmoil or depression. Given the Global Financial Crisis of 2008 and considering that finite resources are being rapidly consumed at a rate never witnessed before (many of which are made into things that are quickly thrown away), Bradfield Moody and Nogrady suggest that we are currently entering into a new period of innovation. This wave will have a primary focus on capitalising, transforming or converting inefficiencies such as waste into valuable resources. New innovative and entrepreneurial approaches will spawn; practices that will have positive environmental, social and cultural impact with an added benefit of potentially yielding great economic returns.[107] Existing materiality—waste—is an opportunity ready to be exploited.



2.2: Product life cycle.

IN SUMMARY: CHAPTER 2

There is a clear relationship between design and waste, both are inextricably linked. Design has the capacity to continue to perpetuate problems, or conversely, design has the capacity to engage directly with emergent issues to provide responsive, appropriate and timely approaches.

Design is also to be viewed as both a problem and a solution. The making of things has negative and positive effects—creation also brings destruction. This is a conundrum; with designing and making comes ethical dimensions and acknowledging the far-reaching implications of design action and the consequences that transcend the physicality of an object. Therefore, a responsibility lies with the designer to adapt and change as the world changes—design and designing has an obligation considering it is one of the primary functions in how the world is positively or negatively shaped.

This chapter has discussed that design requires cultivation and currently requires re-defining and re-directing. Continuing 'business as usual', subscribing to past ideals such as "form follows function" or design as exclusively a stylistic activity, is linear and does not satisfactorily respond to unsustainable practices. Old models still perpetuate more stuff. Although many approaches might use 'better' materials or increased energy efficient processes, trading a 'bad thing' out for a slightly 'less-bad thing' still does not adequately address the root of problems.

James Bradfield Moody and Bianca Nogrady, *The Sixth Wave: How To Succeed in a Resource-Limited World* (Sydney: Vintage Books, 2010), 20-23.

[107] ibid, 11-28.

In the view that the world is drowning in stuff and waste, the concept of ‘designing for sustainability’ perhaps should encompass strategies as to how to deal with the reality of that stuff we already have—that plethora of existing materiality. Designing that engages the practice of reuse and repair has been identified as an appropriate course of action that: a) has the potential to minimise or counter unsustainable practices by having far less impact than standard material refining and manufacturing processes; b) can give new values to something discarded, which requires acknowledging that waste is actually a resource; c) has the capacity to engage on a local level, waste being deemed ‘local’, which has greater social, cultural and environmental benefits; d) has an added benefit of localised action that responds to globalised concerns; e) promotes creativity through the view that resources are scarce and therefore valuable.

CHAPTER 3:
LIMITS OF SBCD AND SHIFTING TO PROBLEM-BASED PRACTICE

Like stuff, SBCD also appears to be in crisis—inadequate policies, lack of acknowledgement in a wider policy setting and evidence of a decline in professional craftspeople. SBCD is also implicated in the broader scenario of stuff, making more stuff is at the heart of what it does.

Yet SBCD as a practice has many valuable attributes. It is a locally focused vocation engaged with a creative process that fosters deep material knowledge and high-level technical skills. To be relevant it must look beyond itself and outside disciplinary fixations. This chapter discusses how, if SBCD's characteristics are re-directed, it may be able to perform "micro interventions" that can disrupt global flows of materiality through alternative practices, such as reuse and repair.

This chapter provides a brief recent history of SBCD to provide context into the roots and ideals that have informed past practice. As this chapter then argues, SBCD must convert from discipline-focused into problem-focused practice. This shift expands current defining factors of SBCD by squarely confronting how it now might meaningfully contribute to a world drowning in stuff.

A brief history

SBCD has roots in the modern studio craft movement that surfaced internationally after the Second World War and later thrived throughout Australia in the 1970's.[108] The Crafts Council of Australia, an independent non-governmental organization set up in 1971, helped in exposing SBCD to a wider audience. Working as an advocacy body to support craft members, the council facilitated a range of activities such as national exposure and lobbying at State and Federal levels.[109] During this time, the profile of craft and those working in it was raised significantly.

Just before the turn of the 21st Century, Noris Ioannou, author of *Masters of Their Craft,* a comprehensive Australian publication covering a spectrum of disciplines, stated:

> In the closing years of the twentieth century craft has become a personal journey of discovery, a tableau of possibilities, and a means of reaffirming enduring values. For both maker and user, the handmade realm of craft sustains the need to be creative, to construct identity and meaning, and to produce and interact with objects of beauty and usefulness.[110]

This statement represents the core foundations of SBCD. Ioannou, however, has not acknowledged the agency of SBCD and 'why' we should make things beyond these baselines of values. Ioannou's statement suggests that craft is an inherently personal pursuit—perhaps craft as art—that makes no links to cultural, political or social imperatives. In contrast, for example, The Arts and Crafts Movement of the 19th Century so famously based on philosophical standings by Ruskin and Morris at the core was a social and political movement against the de-humanising effects of the industrial revolution.[111]

Of course, Ioannou wrote this close to 20 years ago and in the last century. Australia—and the world—is now a very different place. But there still exists a lingering disconnection between craft and its capacity to contribute to emergent problems that extend beyond itself.

Decoupling

David Holmgren, author, designer, futurist, and co-originator of the sustainable and self-sufficient agricultural practice of Permaculture, puts forward that regardless of ethical institutional or business

[108] Grace Cochran, *The Crafts Movement in Australia: A History* (Sydney: New South Wales University Press, 1992), 198-199.
[109] Allan Moult, *Craft In Australia* (Frenches Forest: Reed Books Pty Ltd, 1984), 7.
[110] Ioannou, *Masters of their craft: tradition and innovation in the Australian contemporary decorative arts*, 12.
[111] Elizabeth Cumming and Wendy Kaplan, *The Arts And Crafts Movement* (London: Thames and Hudson, 1991), 9-28.

behaviours, positive change stems from taking responsibility for one's own actions.[112] In regard to my own field, perhaps there has been a focus on too many chairs (remember Chapter 1). After all, many furniture designers have made their names trading off the back of chairs. Clearly rote functional or aesthetic exploration (and ego) cannot suffice as singular lines of enquiry without ethical implications.

SBCD requires decoupling from previous modes of practice. In a paper titled *The Anatomy of Sustainable Innovation within Studio Craft and Design,* Rohan Nicol argues that SBCD is a vital laboratory for innovative action against unsustainable modes of operation. Set within a global context, SBCD has a capacity to disrupt global flows of materiality and commerce. Nicol also notes:

> The capacity for SC+D [studio craft and design] to participate in SI [sustainable innovation] is tied to constraints that emanate from restrictive policy settings, inadequate curriculums and research and resistance to change from established SC+D professionals. It remains to be seen how the discipline will manage a transition from being fixated on issues that relate to internal concerns (aesthetic, material, phenomenological, philosophical, expressive), toward a future in which it can focus its attributes on external issues (such as how we orchestrate and understand our artificial landscape and sustainable innovation) to achieve positive affect.[113]

Links to innovation

Nicol's statement builds on previous arguments from innovation expert Dr. Terry Cutler. In an address at the Sydney Opera House titled *Creativity, the Arts and Innovation,* Cutler argues that the value of the creative industries lies in the studio being a "safe space".[114] The studio is independent from market constraints and fosters enquiry, experimentation and "risk taking".[115] This is an important characteristic of SBCD. Unlike industrial design, SBCD is unique in that it is not tied to the pressures, constraints or economic imperatives of industry. This is SBCD's key attribute as it allows a single practitioner agency, criticality and the ability to work outside of standard conventions. Cutler also adds: "The role of crafts and trades in innovation has been massively neglected … Craft is important to innovation".[116]

In this context, innovation does not just refer to economic growth and development. Contrary to the Australian Government's *National Innovation & Science Agenda* that states, "Innovation is important to every sector of the economy…"[117], innovation also refers to the development of something 'new'. As described by Bradfield Moody and Nogrady, simply put, innovation is, "…a new way of doing things".[118] This aligns with Nicol's call for SBCD to shift from "internal concerns" (old) to a new understanding of the 'why' and 'how' we construct our built environments and what inroads craft can make in an ever-shifting and increasingly complex terrain; and with Fry's development of a "new practice" that redirects away from the unsustainable.

A crisis of studio-based craft and design

Paving a new road for SBCD, however, is faced with lack of or inadequate support. There are several examples. The first being education programs that support SBCD in Australia are being discontinued or dissolved into larger homogenous programs. SBCD not fitting well with university funding metrics (small class sizes, intensive teaching models, extensive infrastructure) has contributed in part to the

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[112] David Holmgren, *Permaculture: Principles & Pathways Beyond Sustainability* (Hepburn: Holmgren Design Services, 2002), 82-83.
[113] Rohan Nicol. 2016. "The Anatomy of Sustainable Innovation within Studio Craft and Design." In *Proceedings of Sustainable Innovation 2016, 21st International Conference 'Circular Economy' Innovation & Design*, Epsom, 2016. Epsom: University for the Creative Arts, Epsom, Surrey, UK.
[114] Terry Cutler. 2008. "Creativity, the arts and innovation." In *A Currency House Conversation*, Sydney, 2008. Sydney: Opera House. http://mikemullins.com.au/doc-man/australian-performing-arts/748-dr-cutler-the-arts-and-innovation-currency-house-19aug08-1/file.
[115] ibid.
[116] ibid.
[117] "Boosting Innovation and Science," www.innovation.gov.au, December 2015, https://www.innovation.gov.au/page/national-innovation-and-science-agenda-report.
[118] Bradfield Moody and Nogrady, *The Sixth Wave: How To Succeed in a Resource-Limited World*, 13.

demise in programs.[119] Recognising broader issues perhaps universal for all creative educational organisations, the 2015 conference of the *Australian Council of University Art and Design Schools* (ACUADS) called on academic papers to reflect these challenges of, "…a globalized and hyper-networked 24/7 culture. Institutional and government policies … and calls for wider impact and productivity".[120]

Evidence also suggests that professional craftspeople are in decline. In a 2010 report focused on surveying the creative industries in Australia titled *Do you really expect to get Paid?,* David Throsby and Anita Zednik state: "The numbers of craft practitioners have continued their long-term downward trend …"[121] A key finding in the comprehensive 2014 report from the National Craft Initiative (NCI), *Mapping the Australian Craft Sector*, Liana Heath and Joe Pascoe write: "To support the future health of the sector, new models of working need to be explored …"[122] In *Making Art Work*, another report by Throsby, co-authored with Katya Petetskaya in 2017, makes note that creative incomes have dipped: "When adjusted for inflation, average incomes have fallen by 4% since 2009".[123] In addition, there also has to be a reason why over the last decade or so many cultural organizations have moved to drop 'craft' from their titles.[124] Has SBCD become increasingly out-of-touch?

Crafty contradictions

Yet despite SBCD potentially in a state of crisis, it appears the activity of craft is on the rise. The NCI published data in 2014 from the ABS that stated approximately 10% of the Australian population is involved with craft.[125] It has been further noted by academics Susan Luckman and Jane Andrews in their Australian Research Council funded project *Crafting Self,* that the foundations laid down in the 1970s craft movement has been reignited as Australia is currently witnessing a "craft renaissance".[126]

There is a contradiction here. What this suggests is that amateur craft endeavours have increased made globally accessible by online platforms such as Etsy. This pertains to the retail sector and at odds with Fry's broader sentiments about how design is the tool in which we construct our environment and its associated effects.

It is craft and design within the Australian professional and education landscape that has declined and perhaps as indicated, could be in crisis. There is a need and an opportunity for SBCD to redefine itself beyond a baseline of values and to engage with broader design issues.

Inherent ethical values

In *The Craftsman*, Richard Sennett writes that as skills are honed and developed—high skill levels being an attribute of SBCD—the 'craftsman' becomes increasingly "problem-attuned". He writes that those with base level or "primitive" skills might struggle with basic techniques or simply "getting things to work". As a level of competence is mastered, skills become tacit and implicit: "At its higher reaches,

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[119] Rohan Nicol and Niklavs Rubenis. 2015. "Crafting Connected Knowledge: Collaborative and Problem-Based Pedagogy for the Studio Craft and Design School." In *Proceedings of ACUADS Conference 2015*, Australian Council of University Art and Design Schools, Adelaide, 2015. Adelaide: School of Art, Architecture and Design, University of South Australia. http://acuads.com.au/conference/article/1616/.

[120] "2015 Conference," http://acuads.com.au, accessed 25 July 2015, http://acuads.com.au/conference/2015-conference/

[121] David Throsby and Anita Zednik, *Do you really expect to get Paid? An economic study of professional artists in Australia* (Sydney: Australia Council for the Arts, 2010), 19. Accessed 18 January 2014.

[122] Liana Heath and Joe Pascoe, *Mapping the Australian Craft Sector* (Sydney: National Craft Initiative, 2014), 74. Accessed 16 September 2014.

[123] David Throsby and Katya Petetskaya, *Making Art Work* (Sydney: Australia Council for the Arts, 2017), 18. Accessed 18 December 2017. http://www.australiacouncil.gov.au/workspace/uploads/files/making-art-work-companion-repo-5a05105696225.pdf

[124] For example, the now titled *The Australian Design Centre* (ADC) has gone through several transitions. In 1995, the ADC was known as *Centre For Contemporary Craft*. In 2000, this evolved into *Object: Australian Centre for Craft and Design*. By 2012, the name evolved again to drop 'craft' and by 2015 'object' was removed.
"ADC Timeline," australiandesigncentre.com, accessed 18 October 2017, https://australiandesigncentre.com/about/history/australian-design-centre-timeline/.
Two other examples are *Craft West* in Western Australia rebranding as *FORM;* and *The Craft Association of South Australia* now goes by the organisational name of *Guildhouse.*

[125] Liana Heath and Joe Pascoe, *Mapping the Australian Craft Sector* (Sydney: National Craft Initiative, 2014), 12. Accessed 16 September 2014. https://gallery.mailchimp.com/198e0c90d7ed9366663b46f99/files/dc45d865-3d38-4762-8b18-ee254ced679e.pdf.

[126] "Crafting Self: Promoting the Making Self in the Creative Micro-Economy," craftingself.net, accessed 29 May 2015, http://craftingself.net/about-the-project/.

technique is no longer a mechanical activity; people can feel fully and think deeply what they are doing once they do it well. It is at the level of mastery … that ethical problems of craft appear".[127]

There are two points that can be made in conjunction to SBCD. The first is Sennett's notion that ethical approaches can manifest to work when deeply engaged with it. This translates to SBCD, although what has been identified is that standard modes of practice can often negate broader ethical dimensions. The second point is the deep engagement with a discipline that fosters pragmatic skills further promotes another aspect that is important to craft—cognitive development.

Cognitive development

Cognitive development benefits from craft. Craft is exercised through the hands and has a direct correlation with the brain. In the aptly titled book *The Hand,* neurologist and author Frank R. Wilson notes this link as fundamental to human intelligence. He writes that cognitive science is as much about the brain as it is about the brain's relationship with the hands—the two are interlinked.[128] Wilson writes that the earliest signs of human brain development evolved due to the extension of the hand through a rise in tool use.[129]

It is also becoming increasingly recognised that kinaesthetic learning is exercised through craft. In a journal article titled *A Discussion of the Necessity of Craft Education in the 21st Century,* authors Eva Veeber, Erja Syrjäläinen and Ene Lind state that craft plays a fundamental role in motor skill development. They note that, "The brain is modified by craft activity".[130] Veeber et al., suggest further that an engagement with craft fosters pragmatic skills transferable to negotiating challenges in life.[131]

There is a connection to be made to the broader themes of this project. For example, author and investigative journalist Jacques Peretti has theorised that frenzied consumerism from which resides many of the world's issues has a direct link with a dislocation from the hand. Over the last century, aside from the obvious explosion in technology which has brought with it massive change, there has been a considerable shift from a predominantly manual labour force to a sedentary work force. This has brought an inability and lack of understanding in the use of the hands specifically for making or fixing things.[132]

Expanding existing modes of practice

It is important here to establish an existing scope of SBCD practice. For economic sustainability SBCD (sustainability here is not used in environmental terms), practitioners have long since employed a range of streams both for financial viability and creative enquiry. Often this is divided into three basic areas—gallery, commission work and limited edition.

This has been true of my own practice to date. The gallery is often used as a 'safe' space for the exploration of ideas with minimal risk beyond financial and time investment (as noted by Cutler). There is the potential engagement of viewers for critical feedback and possibly leads to commission work. Commission work provides a financial outcome typically through one-off works for domestic or commercial clients, or cultural organisations. Generally this adheres to a brief. And finally, limited edition works are small batch production designed with economies of scale in mind. These works are often informed by the gallery and also might capitalise on any processes or details generated via one-off work.

A framework such as this has been outlined by Brian Parkes, curator, author and current CEO of Adelaide's craft and design organisation *JamFactory*. In the seminal travelling exhibition and

[127] Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), 20.
[128] Frank R. Wilson, *The Hand: How its Use Shapes the Brain, Language, and Human Culture* (New York: Pantheon Books, 1998), 7.
[129] ibid, 15-16.
[130] Eva Veeber, Erja Syrjäläinen and Ene Lind, "A discussion of the necessity of craft education in the 21st century," *Techne Series* Volume *22,* Issue 1 (2015): 23. https://journals.hioa.no/index.php/techneA/article/view/875.
[131] ibid.
[132] Jacques Peretti, "Jacques Peretti: Consumerism versus makers," filmed 31 October 2014 at TEDxBrighton, Dome Concert Hall, Brighton, England, video, 18:03, https://www.youtube.com/watch?v=jtG6AE3oVM8.

accompanying book *Freestyle: New Australian Design for Living,* Parkes classifies five generalist categories of those engaged with craft or design in Australia:

a) “Skilled craftspeople”: those who are discipline-based who have high-level material and technical skill that often create one-off pieces for the gallery or collectors, but are also well placed to engage with industry given their intimate knowledge of their chosen discipline;

b) “Self-Manufacturers”: ‘designer-makers’ are concerned with in-house production. Although components may be outsourced through industry, the process is guided by a hands-on approach. Parkes refers to this as the “…genre that we see the most diverse and entrepreneurial approaches to design practice”;

c) “Project Managers”: those who use the specialist skills of industry to produce their work under their own brand;

d) “Global Roamers”: those who design exclusively for other companies, here in Australia and across the globe;

e) “Branded Houses”: Design companies that have retail stores both on and offshore that control all aspects of business such as the design, production, marketing, distribution and sales.[133]

Of course, it is difficult to pinpoint an exact categorisation of those in SBCD as many avenues cross over. In this framework I identify my practice as a combination of a skilled craftsperson, self-manufacturer and project manager.[134] However, there is an additional category that is applicable to practice—critical design.

Critical design

The points raised by Parkes only give focus to how an entity might operate within the realm of a market place for financial return. To establish alternatives to current practices, not only do those practices have to be tested against an existing framework but also against a critique of itself—that is, against the perceptions of why make stuff and why that stuff might then constitute the way it is. ‘Critical design’ becomes a component in this mix. Although not a mechanism often used for financial return, it is an approach that challenges the status quo through the vehicle of design.

Dr. Anthony Dunne and Fiona Raby coined critical design in the 1990s. Although they express this is not so much a method but rather a position, it is defined as an approach that “…uses speculative design proposals to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life”.[135]

An example is Walker’s Potato & Apple Candlestick.[136] These ephemeral ‘products’ are assembled using three forks combined with a half-cut piece of potato or apple in which the centre is hollowed out for the candle. This work is designed to challenge an object’s function and aesthetics, particularly products that are for a very specific purpose that are only ever used periodically. The candlesticks make attempts at questioning designed ‘stuff’ manufactured using virgin resources and specialised tooling, which in turn leave permanent imprints. Walker makes comment that perhaps design be ephemeral to never leave a footprint. Something ‘new’ could be achieved by assembling disparate readily accessible objects that already exist. In this instance, after the candlestick has been used, the

[133] Brian Parkes, “Freestyle: New Design For Living,” in *Freestyle: New Design For Living*, ed. Brian Parkes (Sydney and Melbourne: Object: Australian Centre for Craft and Design, 2006), 16-21.
[134] I also currently teach and this further augments my practice. My experience spans teaching at community, trade and university levels. I currently lecture part-time at the Australian National University’s School of Art & Design. This position has shaped some ideas that emerge during this project and have been trialled via teaching and learning. I have omitted these results from this exegesis. In part, what transpires in the classroom reiterates many of these ideas and does not push the project forward enough to constitute writing about the outcomes.
[135] “Critical Design FAQ,” www.dunneandraby.co.uk, accessed 15 October 2016, http://www.dunneandraby.co.uk/content/bydandr/13/0.
[136] “Apple Candlestick,” www.stuartwalker.org.uk, last accessed 5 February 2018, https://www.stuartwalker.org.uk/furniture-lighting/7-furniture-and-lighting.

potato or apple goes into the compost, the forks return into the drawer, and there is no lasting evidence that the object ever existed.[137]

Problem-based practice

In conjunction with design for critical inquiry, Nicola Morelli's notion of 'design beyond the object' offers a counter approach to standard SBCD by shifting a discipline-based practice toward a model that is problem-based. A specific and singular focus on, for example, technique, form or function could be defined as disciplined-based; an 'old practice'. Broader universal issues and crises stemming from cultural, political, social or ethical dimensions—an ecology of practice—could be defined as problem-based; a 'new practice'. Morelli also calls for a "…wider view of design as an activity of social innovation..."[138]

Nigel Cross has similar sentiments. He has also observed that a "fixation" on singular lines of exploration tends to highlight the limiting capacity of a discipline to engage with important issues beyond domestic concerns. This hampers an ability to find lateral solutions to problems.[139]

A decoupling from any one specific discipline lends itself to the theory of "undisciplined" practice. A mode of design action championed by Craig Bremner and Paul Rodgers, they explain this in the following way:

> Given the global problems of the twenty-first century are increasingly complex and interdependent, and that they are not isolated to particular sectors or disciplines, the possibility exists that design might need to be "undisciplined" in its nature.[140]

In their journal article *Design Without Discipline,* the characteristics of undisciplined practice is outlined in a table titled "Similarities and Differences of the Disciplinary Dissolve". This consists of nine incremental phases that includes Disciplinarity, Multidisciplinarity, Crossdisciplinarity, Interdisciplinarity, Transdisciplinarity, Pluridisciplinarity, Metadisciplinarity, Alterdisciplinarity and Undisciplinarity. At the two ends, Bremner and Rodgers describe *Disciplinarity* to be characterized by, "An understanding that is demonstrated by one set of conceptions and one methodological approach". Whereas *Undisciplinarity* is outlined by aspects identified as, "An understanding is demonstrated that purposefully blurs distinctions and has shifted from being "discipline-based" to "issue or project-based".[141]

What is important in this, however, is all of these terms refer to a 'discipline'. Indeed, a singular focus can be narrow, but without a discipline there would be no multi, cross, inter, trans, and the like, forms of practices. SBCD, being discipline focused, is well placed to make a contribution in this space.

Uncertainty

To squarely face a project of "why make more stuff"—to question the very basis of an individual's SBCD practice—requires an acknowledgement of depth of skill honed through a discipline. Yet this is not enough. It must also be acknowledged that being dislocated from emerging realities can make for irrelevant practice that perpetuates unsustainability. To change might require embarking on an alternative trajectory. Walker reminds us that:

> …we must leave behind our preconceptions, many of the things we hold dear and many of our expectations. This is not a comfortable thing to have to do; it is disconcerting and the

[137] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 173-175.
[138] Nicola Morelli. 2006. "Globalised Markets and Localised Needs. Relocating Design Competence in a New Industrial Context." In *Proceedings of E&DPE 2006, the 8th International Conference on Engineering and Product Design Education*, Salzburg, Austria, September 2006. https://www.designsociety.org/publication/28209/globalised_markets_and_localised_needs_relocating_design_competence_in_a_new_industrial_context.
[139] Nigel Cross, *Designerly Ways of Knowing* (London: Springer-Verlag, 2006), 80-84.
[140] Craig Bremner and Paul Rodgers, "Design Without Discipline," *Design Issues* Volume 29, Issue 3 (2013): 4-13. doi: 10.1162/DESI_a_00217.
[141] ibid.

> route forward is uncertain—but this is the nature of exploration. It is also the nature of design. To be a designer is to be on uncertain ground.[142]

If we are to accept that SBCD has a role to play in shaping alternative futures, then it must be a case of in with the 'new' and a decoupling from the 'old'.

IN SUMMARY: CHAPTER 3

There is an urgent need to redefine an alternative value for SBCD. Although in what appears to be a potential crisis of SBCD, it does demonstrate capacity to link with innovative practices. The studio is a free space independent from external forces. This is SBCD's relevancy as it affords an individual maker the critical opportunity to engage and disrupt global flows of materiality. This, however, requires a broader view of practice and shifting from fixations on 'discipline specific practice' to an engagement with 'problem-based practice'. Given many of the issues the designed world is facing transcends any one single discipline or linear line of thinking, a practitioner, if to remain agile, must expand practice beyond the service of a market, and further again beyond the object itself.

It has been highlighted that SBCD has many inherent attributes. These are valuable transferable assets and skills capable of contributing to meaningful making practices through engaging with broader issues. SBCD is a tool that can make timely responses to a changing and complex world. Given SBCD's attributes and existing capacities, as a vocation it can make a vital contribution to the overall quality, function, longevity and sustainment of an ever-expanding built environment.[143]

[142] Walker, *Sustainable by Design: Explorations in Theory and Practice*, 34.
[143] Matthew Kiem, "Theorising a transformative agenda for craft," *Craft + Design Enquiry* Issue 3 (2011): 39-41. http://press-files.anu.edu.au/downloads/press/p211931/pdf/book.pdf?referer=1184.

BRIEF OVERVIEW OF CHAPTERS 1, 2 AND 3
A TRANSITION TO PART 2

In summary, the first three chapters of this exegesis offer the following key points:

1. A crisis of stuff and sustainability
There is a clear crisis in the proliferation of stuff; stuff has exponentially increased over the last century. With more and more stuff comes more and more waste that in turn impacts social, cultural, political and environmental imperatives. As was discussed, moving toward sustainability is a difficult task as many of the structures that support the production, consumption and disposal of stuff have become increasingly hidden from view. We have progressively become disconnected from where our stuff comes from and where it ends up. This affects studio-based craft and design, and for that any design-based discipline, as at the heart of what it does is the production of more stuff. This raises questions around the roles, responsibilities and ethical dimensions of practice.

A key question that asks "why make more stuff" poses as a driver for enquiry into what might define alternative modes of practice; that is, the 'whys' and 'hows' of designing and making and how this might manifest in practice. This, however, requires a broader perspective and understanding of design that further acknowledges 'business as usual' approaches still perpetuate unsustainable practice.

2. A call for 'new' practice and understanding design
As the world changes, design also has an obligation to change in response to emergent concerns and issues. This section highlighted that design is a key mechanism in how the world is shaped. The problem of waste is therefore both an issue of and for design. To adequately respond to this reality requires acknowledging that the act of design is a conundrum; design is both part problem and part solution. Design practice requires an increasingly holistic view and a re-direction away from existing models.

Given the problems faced with what to do with excessive amounts of waste, it is highlighted that design has the capacity to engage in practices of reuse and repair as the means for keeping things in circulation and out of landfill. Instead of continually producing more and more new stuff, it is suggested that 'designing for sustainability' could turn attention to dealing with what already exists.

3. Limits of SBCD and a shift to problem-based practice
Like the world of stuff, it appears that SBCD could also be in crisis. Amongst a plethora of other factors, there is a decline in the profession and it is not well supported educationally or within wider policy settings. SBCD is also implicated in the aforementioned boarder scenario of stuff and is often fixated on rote disciplinary concerns that fail to engage with wider circles of significance.

Despite these problems, SBCD is a vocation that holds many positive attributes. SBCD, through the studio as a free and independent space, is a prime incubator for innovative practices that are agile and capable of performing interventions into existing mass-materiality. However, to be relevant and timely, SBCD has to shift from singular disciplinary lines of enquiry to 'problem-based' practice and an acknowledgment that practice sits within an ecology of cause and effect.

PART 2: WHAT TO EXPECT

The next section seeks to put theory into practice. The proceeding chapters cover works that explore key points raised in the literature. Work is discussed in chronological order; every case study begins with the motivating premise or background followed by an overview of production via the studio and the thinking that drives it. Each chapter finishes with a critique or synopsis against the literature.

Additional theoretical points are raised throughout this discussion, to augment the work. The proceeding works highlight how my practice is changing and as the project progresses, the thinking that underpins each of the examples grows in complexity and sophistication. What is most prevalent in these examples is that the practice shifts significantly from making to re-making and further to using design as a facilitator for local community engagement that focuses on reuse and repair as the means for bringing people together.

Chapter 4 covers a series of commissioned side tables made to a client brief. This work utilises reused materials that also incorporates elements of reparability. Through a critique of the final result, my conclusion still ties it to an old model of working that does not respond adequately enough to the aims set out for this project.

Chapter 5 discusses a stool prototype that was an attempt to directly engage with the waste stream. This was exhibited in the gallery sector. Although these examples begin to develop further notions around the ethical implications of designing and making, and reusing and repairing, again, this studio work is only an incremental step away from existing practice.

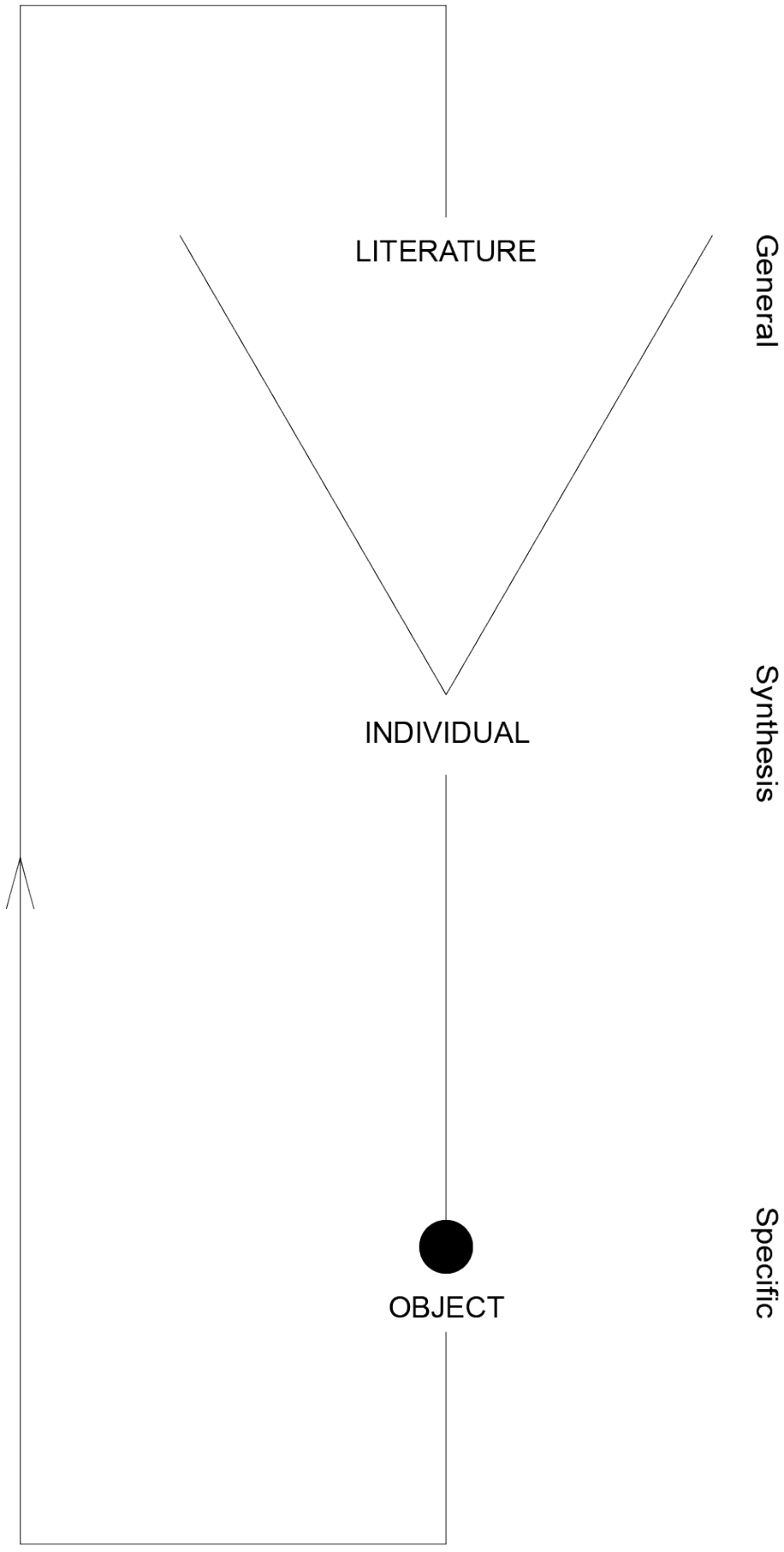
Chapter 6 documents a commissioned lighting installation for a cultural institution that transforms 80 plastic milk bottles into a cloud-like form. This project marks the beginnings of a big shift and a ‘letting go’ of preconceived ideas about practice and what things should look like.

Chapter 7 introduces a solo exhibition, *Crafting Waste.* This group of work signifies a point where the project really starts to take shape through a direct and open collaboration with stuff salvaged off the side of the road and out of general waste bins. *Crafting Waste* also delves into small-scale interventions with waste materials that encourage participation from the community.

Finally Chapter 8 presents a collaborative research and remaking project, *Object Therapy.* This case study asks members of a local community to submit broken objects for transformative repair. These ‘repairs’ are completed by a range of artists, designers and craftspeople and in doing so shows the limits and potentials of SBCD practice for facilitating public involvement around issues of waste.

The final section of this exegesis, *Part 3*, is a discussion and final synopsis of this project. I also provide an indication of where my practice is now heading.

It is worth noting that the tone of the following section changes to adopt a more personal narrative. The studio is used as the means to synthesise the literature into a physical manifestation—such as an object—for critical reflection. This has to flow through an individual practitioner (me), as highlighted in Figure 3.1, and as such the following written account reflects this approach.



3.1: General (literature)–Synthesis (individual)–Specific (object).

PART 2: PRAXIS

CHAPTER 4:
FOUR SIDE TABLES

The following work uses local materials, in this case remnants of a diseased urban tree that was cut down, and seeks to understand that materials hold other values beyond just a resource to be exploited. It also draws on Fry's sentiments, transposing historic approaches into 'new' forms of practice.

Through this process the project links with conservation, a field that deals with objects of historic or cultural value and one not generally associated with design. Not only does this bring up notions of designing for reparability, but also how design is a key driver in the emotional content of why things are valued—why we hold onto stuff and why other stuff gets discarded.

The work is a series of four timber side tables made in pairs. Two have drawers—one at the front and one at the side—and two feature slide out tops. These tables are detailed, technical and highly crafted. The tables highlight the capacity of design to tell a story and therefore increase the 'value' of inferior materiality through craft skills; they also illustrate an approach still tied to a traditional SBCD practice.

4.1: Four Side Tables.
Exhibited as part of the exhibitions *Made 3: Volume 1* (He Made She Made Gallery, Sydney NSW), *Maker+Designer* (Nishi Gallery, NewActon ACT, Canberra). 2014; and "Citizens of Craft (Craft ACT: Craft and Design Centre). 2016.
Materials: Blue Spruce, Silver Ash.
Dimensions: 500 x 350 x 600 mm.
Image by Halie Rubenis.

Premise and background

Four Side Tables (Figure 4.1, Appendix 1) was a commission from a local Canberra resident. An exotic coniferous Blue Spruce was felled in their front yard due to disease, leaving a considerable gap. Physically it had shaded the house, but it also held emotional and symbolic associations as the family's children had grown up playing in the tree. The clients did not anticipate such strong feelings of responsibility, guilt and nostalgia surrounding the tree's removal, and felt compelled to acknowledge this through commissioning its revival in another form.

The brief was simple: to use the timber and transform it into some form of furniture. Other than those parameters, the project considerations were left open.

Materiality

The wood from the Blue Spruce is problematic. As an introduced species that grows rapidly in Australian conditions the trees are weak, soft and better suited to pulp.[144] This specific material was destined for a similar fate. It also had significant defects such as knots and Blue Stain, a fungus that lives on the cells of newly felled timber. Fortunately, Blue Stain has minimal structural impact yet because of its diminished aesthetic appeal is often seen as undesirable.[145] Even though this timber would not have even made good firewood, it provided an opportunity to capitalise on a readily

[144] "Picea," www.abc.net.au, 8 March 2007, http://www.abc.net.au/gardening/stories/s1866638.htm.
[145] Keith R. Bootle, *Wood In Australia: Types, properties and uses* (Roseville: McGraw-Hill Book Company Australia Pty Ltd, 2000), 24-25.

accessible and local resource and to test what value could be added through an application of craft skills.

Urban street trees

In an urban setting such as Canberra, trees are regularly felled for myriad of reasons. In 2014, the *Canberra Times* reported that the local government had marked in excess of 1000 trees to be removed, some of which were not to be replaced.[146] In 2016, over 120 street trees were removed from one of Canberra's main transportation arteries to make way for the construction of light rail.[147]

These examples are indicative of any urban setting going through development and represent two points. One is the removal of, as suggested by Miller, those hidden life sources and the loss of a connection to natural elements to then be replaced by buildings. Secondly, these trees are a resource that can be utilised or value added; many Canberra street trees do end up as mulch.[148]

Importance of trees

Nalini Nadkarni, in *Between Earth and Sky*, states that trees are one of the most important human life sources. Trees support the production of oxygen, remove carbon from the atmosphere, and provide food, water and materials. Trees supply shelter both in their natural form and through their use as a building material. Products extracted from trees are also used in both indigenous and Western health practices.[149]

Beyond these practicalities, Nadkarni further notes that trees contain deep symbolic meaning and can be attributed to ancient and popular cultures from across the world. Trees offer a sense of scale in relation to time and history, and traverse language, art and music. Nadkarni makes links to spirituality citing examples such as the "Tree of Life", "Tree of the Knowledge of the Good and Evil" and Buddha's enlightenment from sitting under a Bodhi tree. She also suggests that an understanding of trees as central to human existence makes aware of environmental degradation and negative impacts, and the disconnection to natural surroundings through the impact of technology and densely populated cities.[150]

Like the client's emotional connection to their surroundings, a tree signifies more than just a static object that supplies a material. Understanding where a chosen material comes from, in conjunction with its practical and symbolic attributes, requires a considered approach whereby it is seen as holding more value than simply a resource to be exploited by design.

The old meets the new

Drawing from Fry's call to find appropriate historic material that can be transformed into "futuring forms", *Four Side Tables* was born from an assessment of local practices and links made with the field of furniture conservation. Conservation, a profession generally concerned with the preservation of objects of historic or cultural value, is typically not associated with design although the field engages with the end results of design.

Conservation works from an entirely different perspective and in reverse to the process of design—at the end. There is a dialogue that exists between the old (conservation) and the new (design); by asking simple questions around the long-term repercussions of design decisions and by understanding why something fails from a design, material or a construction viewpoint, an opportunity presents itself to evaluate the practice of making from a reverse position (Figure 4.2).

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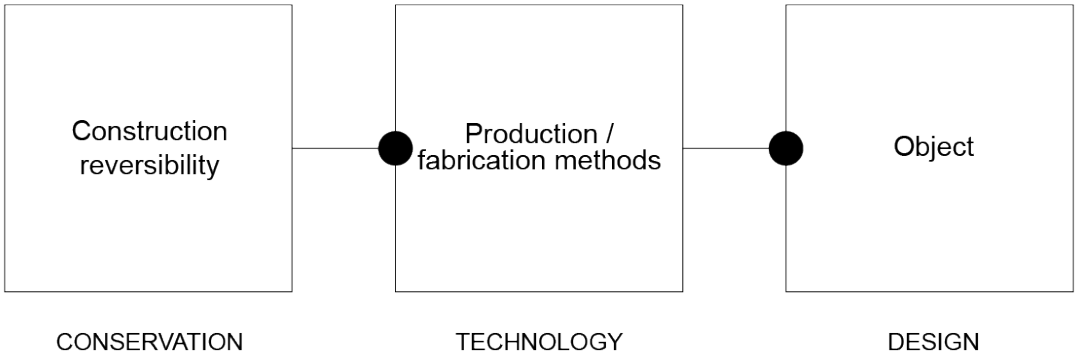
[146] Larissa Nicholson, "More than 1000 of Canberra's street trees to be removed," *The Canberra Times*, 23 February 2014, http://www.canberratimes.com.au/act-news/more-than-1000-of-canberras-street-trees-to-be-removed-20140222-33998.html.
[147] Andrew Brown, "120 trees to be removed from Northbourne Avenue for Canberra light rail," *The Canberra Times*, 10 December 2016, http://www.canberratimes.com.au/act-news/120-trees-to-be-removed-from-northbourne-avenue-for-canberra-light-rail-20161210-gt8d0z.html
[148] "Frequently Asked Questions About Urban Trees," www.tccs.act.gov.au, last accessed 20 February 2018, https://www.tccs.act.gov.au/city-living/trees/frequently_asked_questions_about_urban_trees.
[149] Nalini Nadkarni, *Between Earth and Sky* (Berkeley: University of California Press, 2008), 12-17.
[150] ibid.



4.2: Conservation-Technology-Design.

Conservation employs a range of techniques, many of which rely on historic and traditional craft skills. This revitalises the importance of understanding materiality and heightened technical awareness. By offering insight into reversible construction methods conservation places a focus on the whole design as a system of integrated removable parts. Many construction methods are permanent and if one part is rendered unusable the design is denied any opportunity for a repaired future. Conservation promotes reparability or adaptability.

Design for disassembly

Thinking about design in regard to reversibility is not to be confused with *Design for Disassembly* (DFD). DFD originated in the 1970s and is a well-known practice of designing products to be dissembled. At the end of a product's lifespan, components or materials are removed for reuse or recycling to minimise resource exploitation.[151] This is especially applicable for complex products, for example a car, fridge or office chair, where there may be a multitude of different materials used in the one item. DFD posits an alternative to cradle-to-grave. However, it does rely on manual labour to perform the disassembly and this has not always proven to be cost effective.[152] Given a globalised economy, DFD also assumes that everywhere has the same abilities, systems or technologies for disassembling or recycling those materials.

The main differences between conservation and DFD are: a) DFD is inherently designed with an expiry date, not as a long-term product capable of being repaired; b) conservation generally revolves around the use of natural materials as they are far better suited for repair or refurbishment, requiring low energy processes; c) conservation is performed at a local level; and d) DFD is an industrial process whereby conservation is adaptable to SBCD.

Aside from these technical considerations, conservation also raises important questions around why 'things' are valued; why some objects have remained in circulation and others end up in landfill.

Emotional connections

Affect plays a key role in either maintaining or discarding material possessions. Cognitive scientist Donald Norman explains that developing emotional content is a crucial layering in the design of everyday products. Norman states that regardless of how things are made—or how and what they are made from—the way in which a product communicates intent and how that makes the user feel is the most significant element.[153]

[151] Robert Bogue, "Design for Disassembly: a critical twenty-first century discipline," *Assembly Automation* Volume 27, Number 4 (2007): 285.
[152] S.L. Soh, S.K. Ong, A.Y.C. Nee. 2014. "Application of Design for Disassembly from Remanufacturing Perspective." In *Proceedings from the 12th Global Conference on Sustainable Manufacturing*, Johor Bahru, 2014, 577. Johor Bahru: Elsevier BV.
[153] Donald A. Norman, *Emotional Design: Why We Love (or Hate) Everyday Things* (New York: Basic Books, 2004), 4-6.

Business also uses affect as a tool to develop and foster faithful consumer-brand relationships.[154] An example is Jacques Peretti's (JP) three-part documentary series *The Men That Made Us Spend* (2014). During episode one, Peretti interviews a range of people queuing to buy the new iPhone 5S. When he asks the person (P) at the front of the queue what the 5S model will offer that is more significantly advanced than the 5, the response is "…probably not much. There is a finger print scanner which is very cool".

The conversation continues:

> JP: So, you've queued for three days to buy a new phone that is not going to do much more that the phone you've got at the moment?
>
> P: At the end we walk away with something new that we all want.

Peretti continues interviewing people from the thousand-large queue, another response being:

> JP: Why is it so important to you to have the latest phone so quickly?
>
> P: Because this time they are in [a] different colour.
>
> JP: Because it's a different colour?
>
> P: Yep
>
> JP: That's what brought you here?
>
> P: [nods] …it's a part of my life at the moment.[155]

This exchange illustrates these 'faithful' relationships, which largely come from marketing campaigns designed to convince consumers to buy things they may not need. If Norman's theory is linked with the final statement, "It's a part of my life at the moment", then this translates to the user's connection to an object being inexorably linked to design's ability to offer a meaningful story.

Joshua Glenn and Rob Walker's experimental *Significant Objects Project* also shows how an object can communicate in ways that make stronger object-user connections. Glenn and Walker purchase cheap thrift store objects that hold no significant value and then team up with a writer who attaches a fictional narrative to the object. Even though clearly advertising the objects had false heritage, Glenn and Walker returned a profit of around 2800% when selling the objects on eBay. They conclude: "Stories are such a powerful driver of emotional value that their effect on any given object's subjective value can actually be measured objectively".[156]

Glenn and Walker's project raises questions around how we relate to stuff. Within a globalised and homogenised marketplace where many products look the same, it appears there is a yearning to regain individuality via objects laden with meaning.

Psychologist Sherry Turkle's book *Evocative Objects: Things we Think With* reveals how emotional and intellectual attachment can be instilled into an object. An essay by Susan Pollak, a clinical instructor in psychology from Harvard Medical School, focuses on a rolling pin once used by her grandmother. Pollak's grandmother had been a pivotal and stable figure throughout her childhood; the rolling pin was central to their time spent together. Years after her grandmother's death, the use of the rolling pin with her own children conjures memories representative of time and place.[157] Pollak concludes:

> The evocative object holds more than memory; it holds healing potential. We create our

[154] Robert Brunner, Stewart Emery and Russ Hall, *Do You Matter? How Great Design Will Make People Love Your Company* (New Jersey: Pearson Education Inc., 2009), 14-16.
[155] "Episode One," *The Men Who Made Us Spend*, Writ. Jacques Peretti, British Broadcasting Corporation, 2014. TV Series.
[156] "About the Significant Objects Project," significantobjects.com, last accessed 20 February 2013, http://significantobjects.com/about/.
[157] Susan Pollak, "The Rolling Pin," in *Evocative Objects: Things we Think With,* ed. Sherry Turkle (Cambridge: MIT Press, 2007), 226-228.

> objects and are inspired by them. As I found with my rolling pin … the evocative object is transitional in the fullest sense of the word—it can bring together generations, anchor memory and feeling, and evoke attachments long been forgotten.[158]

Pollak's is a personal story, much like the premise for *Four Side Tables,* and reveals the deep intimate relationship and profound emotional connections that can be formed with objects. Glenn and Walker's project on the other hand shows that a story attached to an object could also be construed as a tool for economic return.

If an emotional connection is developed with an object, then the object must have attributes that extend beyond it. Yet this relies on the individual who acquires that object to instil his or her meaning (time, place, circumstance, connection). Or it relies on a 'maker' to interpret that story. In contrast, wrapping a story around an object is also a mechanism for selling more stuff and when applied to the context of design, offers both negative and positive consequences. There is a clear ethical dimension here.

Additionally, an object and its associated stories can become entwined. The field of conservation would not exist as it does if there were no value in fixing something beyond the obvious physical need of preservation and repair. For an object to be valued it therefore must possess other ongoing attributes other than monetary.

IN SUMMARY: THE RESULT

The intent of *Four Side Tables* (Figure 4.3) was to keep the form of the work simple yet sophisticated in detailing that spoke of craftsmanship. The legs intersect the tops so there is no demarcation between these two elements (tables often have a separate leg frame and top—two separate parts) as a nod to the project being interconnected to the client. One pair is designed as bedside cabinets, which are inherently personal and intimate objects, and the other pair is for a public space such as a living room. The bedside cabinets have shallow drawers for personal items (one at the front, one at the side); the other two tables have slide out tops. For this component to function no other object can sit on top of the table; this dictates how the object is to be used.

The Blue Spruce was used on the inside of the tables, for hidden details requiring interaction and discovery from the user. When the drawers or slide out tops are opened, the locally logged tree is exposed to reveal the 'story' of the family's connection to a place and specific environment. The idea was to generate a marker-of-time as the potential mechanism for a closer relationship and understanding of the origins of a material possession and the local environment in which it had come from.

The client's two children who grew up playing in the tree were also considered, hence the pairs. Both pairs have the same form but with different functions, so one of each table could be passed on to their children as heirlooms. In this way the client's children become the custodians, but this relies on the story and the purpose of the project being passed on.

[158] ibid, 230.

4.3: Four Side Tables (detail).
Image by Halie Rubenis.

Good work

This is some of the best work I have ever done. The quality of the making is high; the form is considered and the finish immaculate. The phrase 'to do good work requires good clients' is true as the tables allowed an exploration of meaning and technical investigation without the constraints of tight deadlines, combined with a budget allowing for these considerations.

To say the clients are happy is an understatement. They also recognise that the work had significant investment from both parties, and have since allowed the work to be displayed in numerous exhibitions. Albeit a personal narrative, the story associated with the tree added increased 'value' to the work. Viewers were intrigued by the use of materials, particularly that the tree was a locally salvaged resource that had previously been destined for mulch, and that it was from someone's garden. Aside from coverage in various media channels, I received an email from a prospective client after the work was exhibited in Sydney: "…I was also fascinated by the story of the bedside tables which only increased my interest".[159]

Still bound to past models

This is all good and well. However, the purpose of this project is to develop an alternative practice by actively engaging with broader problem sets, the issues of stuff and the whys and hows of making beyond a baseline of values.

[159] Email to the author, 13 July 2014.

Four Side Tables highlights thinking and practice that is still tied to an old model; design first and then manipulate materials to suit. After experimenting with ways of utilising the Blue Spruce for the main structure, I gave up trying to make the furniture exclusively from that material. The Blue Spruce had significant limitations and instead of the process being guided or responsive to these limitations —that is, not seeing materials as expendable and at the whim of the designer—the material was instead utilised on the inside of the drawers and slide-out tops and a different, more stable species, used for the main structure.

This work is not a decoupling or an exploration of a practice situated within a broader ecology. Nor is it engaged with issues outside of domestic disciplinary concerns. Work like this is still an aesthetic pursuit as it is driven by a preconceived idea about what an object should look like. The materials were not performing to suit the design so a story was wrapped around the object and made to be the primary focus. This is safe work; essentially any story can be wrapped or formed around an object to instil 'value' be it for driving the design process or for marketing imperatives. The tables satisfied a client brief and ticked a few emotional boxes but fail to delve deeper into the complexities that surround SBCD and its capacities for moving toward sustaining outcomes.

The tree was going to become mulch, which could be deemed as a 'waste'. However, this fate is not overt in the work. The material being hidden neither discusses nor hints at any critical issues that can be addressed through design and further perpetuates notions that anything and everything is expendable. The tree is also a virgin resource requiring initial processing before the materials could then be processed again for use in the manufacture of the work.

Positive but linear

There are positives to this work. It touches on reuse and through the links made with conservation raises notions of reparability via traditional joinery methods (Figure 4.4 and Figure 4.5). Many current manufactured objects are constructed in such a way that they become unable to be reused or repaired. Inevitably this shortens lifespans and hinders what can be done further after an object is no longer wanted, highlighting the permanence of much stuff that gets put out into the world.

Regardless that *Four Side Tables* received a positive outcome, it is still a linear response and only an incremental step. And furthermore, it makes the assumptions that a) the side tables can actually be fixed; and b) that there is someone in the future that can perform that repair.

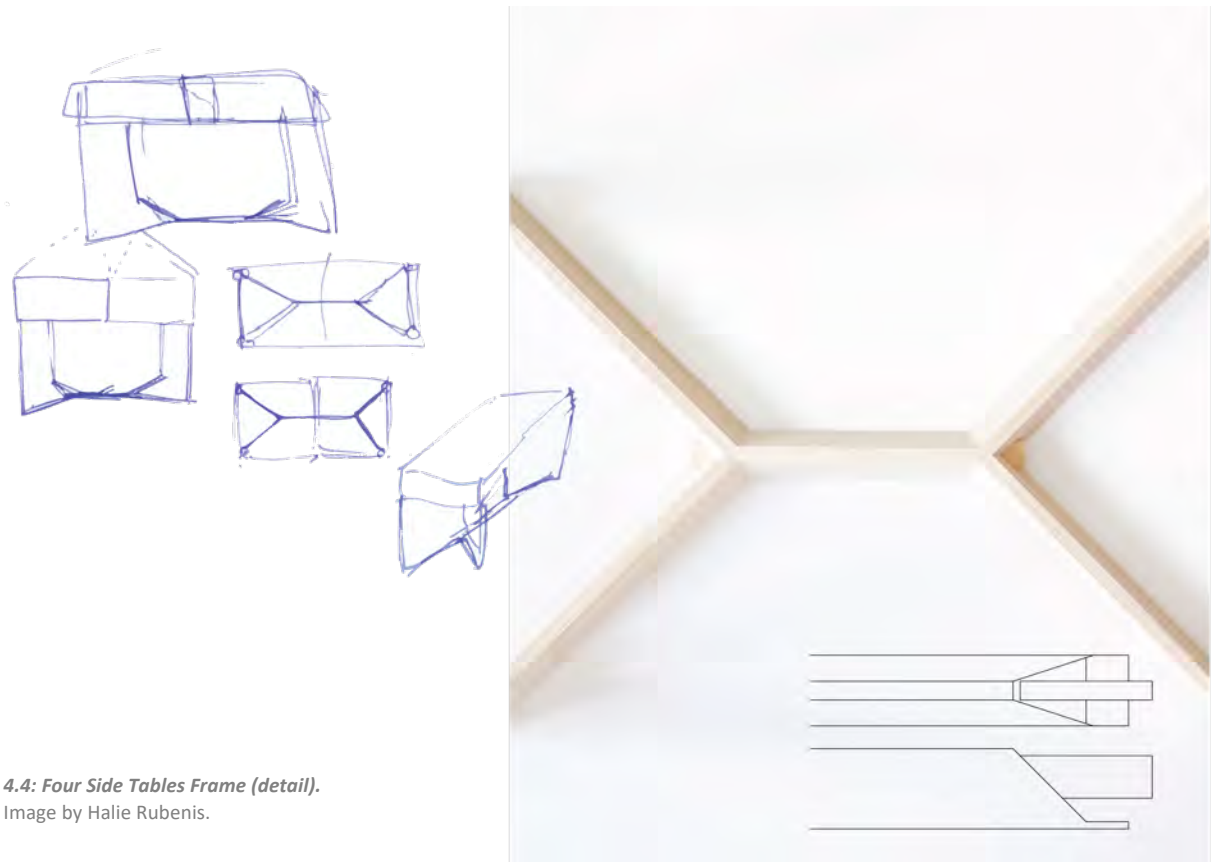
Ego

Ego is tied up in this work. Tables (like chairs) are a staple item for a designer maker and can be used to exercise or flaunt technical proficiency. I made the tables to be highly crafted pieces, perhaps even to the object's detriment, as the precision and finish can prevent actual use.

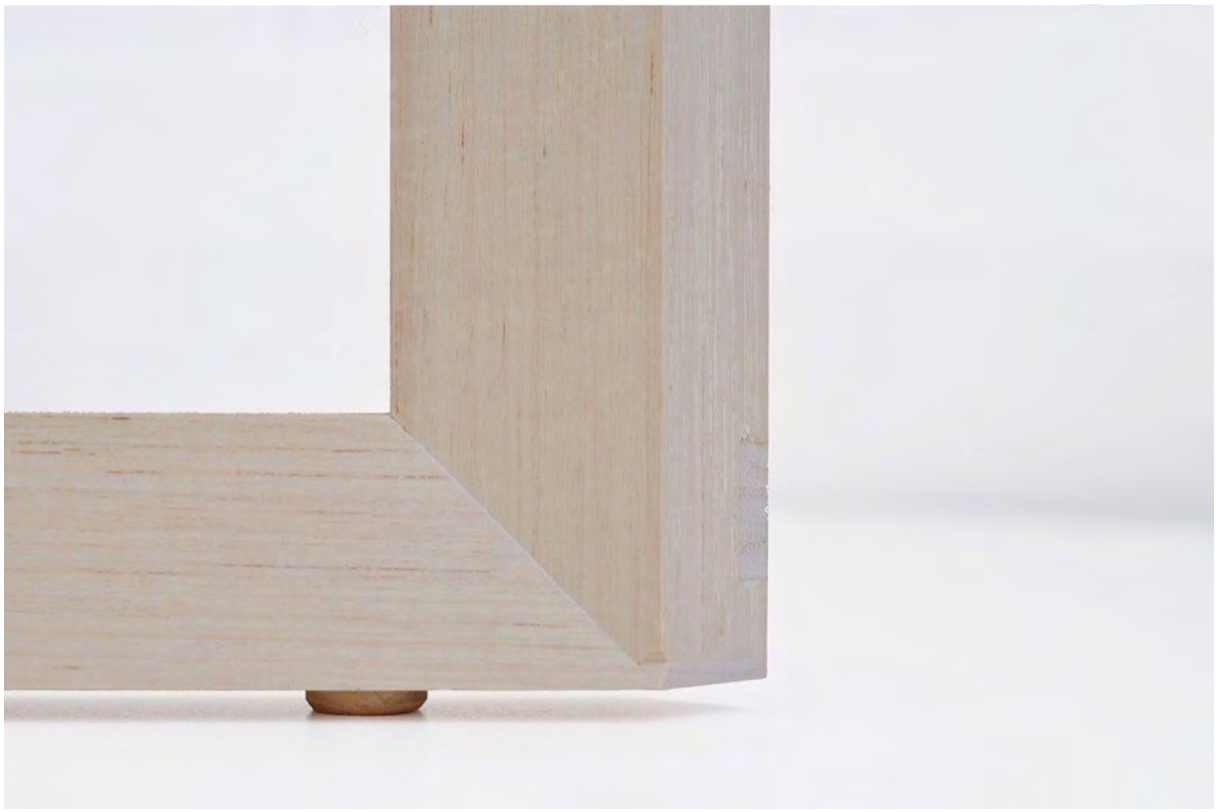
The work is also stand-alone and through its function prescribes exactly how it is to be used. All objects to lesser or greater extents communicate what they are. However, in this case, it has to be reconciled that the work was more about a designer (me) designing an object that dictates what the user can and cannot do, and furthermore having an authoritative relationship with the materials. This highlights the problematic nature of design and its capacity to either be a solution or continue to contribute to the problem.

Yet the work was important to complete as it illustrates the existing limits of SBCD and provides a reference point for future work. What the work does well is firstly proves that emotion is a powerful component of design, and secondly the value of craft skills.

But clearly, we already knew this.



4.4: Four Side Tables Frame (detail).
Image by Halie Rubenis.



4.5: Four Side Tables (leg detail).
Image by Halie Rubenis.

CHAPTER 5:
STOOL PROTOTYPE #4

5.1: Material explorations for Stool Prototype #4.
Materials: Laser cut HDPE from discarded milk bottles (left) combined with experimental dry joinery (right). 2014.
Dimensions: Variable.
Image by Halie Rubenis.

Stool Prototype #4 is an experimental prototype that uses materials rescued from the waste stream. This work makes attempts at: a) building on design reversibility; b) increasing an understanding of sustainability and the links to design; c) recognising that concerns of waste is both an issue of and for design; and d) shifting a mode of practice to be responsive to a problem-based setting.

Recognising that the studio has the potential to be dislocated or disengaged from broader themes, the stool was born from involvement with the Green Steps program (GS), a training initiative that promotes and equips individuals with skills for addressing issues of sustainability.

Stool Prototype #4 is not particularly well resolved beyond an exhibition setting and so therefore acts as a proposition. My critique suggests it is still bound to a past model but it does mark a more significant approach whereby SBCD directly engages with micro-scale waste interventions.

Premise and background

Stool Prototype #4 (Figure 5.2, Appendix 2) is constructed from used high-density polyethylene (HDPE) milk bottles and discarded wood. The entire assembly, including the plastic seat webbing, comes apart to occupy a small footprint. Achieved by re-appropriating traditional construction techniques that do not employ the use of glue, screws or mechanical fixings (known as ‘dry assembly’), the structural work is based on design-reversibility influenced by conservation.

The materials are manipulated using digital and static woodworking machinery, industrial machines common within local cabinet making or signage industries. The milk bottles are sliced, straightened and laser cut with a specific pattern that allows folding to increase strength as functioning seat webbing. A computer numeric control (CNC) router was employed to process several components for efficiency.

The purpose of engaging both production method and reuse of material was to use readily accessible 'local' resources, although highly likely the materials used are not sourced or manufactured locally. The stool fuses craft skills with efficient manufacturing as a test for turning a devalued resource into an up-cycled commodity.

Figure 5.2: Stool Prototype #4.
Exhibited at Craft ACT: Craft and Design Centre as part of *Embracing Innovation: Volume 4*. 2014.
Materials: Laser cut HDPE from discarded milk bottles (seat) combined with Tasmanian Oak from a reclaimed bed head (under structure).
Dimensions: 470 x 340 x 400 mm.
Image courtesy Craft ACT: Craft and Design Centre.

The Green Steps Program

Whilst in the midst of making *Four Side Tables* I was selected as one of fourteen candidates from across the Australian National University's campus to participate in Green Steps (GS), a sustainability program being offered through the ANU's Sustainability Office. GS provides resources for host venues to facilitate training on issues of sustainability and strategies for implementing them into work practices.[160]

I applied because I recognised the strong connection between sustainability and design. In pushing this project forward, I identified this an area of weakness for my own practice.[161]

GS focused on a range of issues including energy consumption, climate change, resource use, sustainable development applicable to business, and waste, to name a few; but also interpersonal skills such as leadership, presentation tips and approaches on how to be a positive 'change agent'. A change agent was defined as an individual who could convey a meaningful story rooted within a wider

[160] For context, the Green Steps website offers this description: "Green Steps was born from the idea that a healthy and sustainable future can only come from creating change agents who inject positive actions into the places they live, work and socialise. Green Steps' key aim was to help these change agents gain the skills to turn their organisations into innovative, functional and sustainable places to work. We do this by providing a practical, hands-on approach to learning the 'how to' of creating a sustainable workplace".
"About Green Steps," www.greensteps.edu.au, accessed 20 November 2014, http://www.greensteps.edu.au/about-green-steps/our-history
[161] In my application I stated: "Furniture design is not a life-saving activity, but it is somewhat fundamental, we do all use it, so it can act as a vehicle for debate, discussion and sometimes even change. And this is what I want to try and learn more about—how can I better my understanding and be more environmentally aware? …I can only see this understanding develop from meeting, listening, learning, discussing and collaborating with people from a wide range of disciplines, far removed from my own … That's why I want to do the Green Steps Program".

context in an accessible manner to reinforce or influence others values.[162] Design, as exercised by *Four Side Tables,* is an effective tool for delivering those stories.

GS's most informative component was a teaching and learning environment consisting of a range of people with very different skills sets from my own.[163] Many participants were completing undergraduate and postgraduate degrees related to environmental studies; I was the only design-based student. Through many group collaborative projects, brainstorming sessions and discussions that were undertaken around the above-mentioned topics, every activity employed the process of design. Not in the sense of design as a creative endeavour but rather the systematic process of 'design thinking'.

Design thinking

Design thinking (DT) is a 'human-centred' collaborative approach to solving complex problems.[164] The most notable international design company that employs this method, IDEO, describes this as:

> Design thinking utilizes elements from the designer's toolkit like empathy and experimentation to arrive at innovative solutions. By using design thinking, you make decisions based on what future customers really want instead of relying only on historical data or making risky bets based on instinct instead of evidence.[165]

As suggested by IDEO, design thinking is generally associated with business. But it is also framed as a set of steps that can be applied by anyone to broader problems.[166] The process is as follows:

> Discover: A framing of the design challenge;
> Empathise: Human-centred approach and information gathering;
> Ideate: Create solutions and generate concepts;
> Prototype: Test ideas to generate feedback;
> The above four steps are continued in a cyclical fashion until a solution is realised;
> Deliver: Implementation of the design;
> Continue: The completed design problem is then used to inform future design problems.[167]

Although I have worked extensively within the design industry, and collaboratively across interdisciplinary boundaries on projects that required considered design solutions with a range of stakeholders, many of the 'problems' that arose from this were only ever project or discipline specific. Asking questions like "how could climate change be solved" opens up a far greater discussion and broader complex context. This may seem like a relatively simple, or even naïve, way of framing a design practice—problem-based rather than discipline-specific-based—but it does expose how insular and roped-off from real world scenarios a practice can be.

Problems with design thinking

Exercising empathy is a central component of DT. This is important as it encourages designers to consider the actual people they are designing for by taking 'human' perspectives or needs as fundamental to a design process. However, this can also be a problem. For example, Cameron Tonkinwise suggests that designers are too empathetic in that many have taken on the role of solving small, inconsequential and innocuous problems. He uses an example of a mug that incorporates a key to prevent fellow work colleagues from using it; and a cup that has a small recess in the bottom to

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[162] Michael Margolis, *Believe Me: Why Your Vision, Brand & Leadership Need a Bigger Story* (New York: Get Storied Press, 2009), xix.
[163] At the Australian National University, Green Steps training was facilitated and led by Dr. Su Wild-River, an environmental expert with a broad range of skills and interests. I have to note here that Wild-River is an excellent teacher and mentor, and her insight into environmental challenges deeply affected the proceeding trajectory of my own work.
"About," wild-river.com.au, last accessed 15 August 2018, https://wild-river.com.au/about/.
[164] Robert Curedale, *Design Thinking: Process and Methods Manual* (Topanga: Design Community College Inc., 2013), 13.
[165] "Design Thinking," ideou.com, accessed 24 November 2014, https://www.ideou.com/pages/design-thinking.
[166] Tim Brown, *Change by Design* (New York: Harper Collins, 2009), 7.
[167] "IV Facilitating Design, Design Summit – Facilitator Toolkit", www.ewb.org.au.

help drain dishwater after it has been washed.[168] What is gained through designing and making these objects?

Another example is the *Microcone* by industrial designer and university professor Donald Corey. Featured in his book 200 *Concepts for Production,* the *Microcone* is a handheld plastic cone-shaped device that houses an ice cream cone:

> Tired of getting sticky hands while eating and singing into your ice cream cone? Who isn't? Well now you can sing "Bye, bye, bye" to the sticky hand blues with the Microcone. Kids will keep the car or anywhere else they are eating their ice cream cleaner and you will get some much needed sing-a-long time with family.[169]

This is a genuinely designed object. Let's consider that an ice cream has its very own cone, which can double as a buffer for sticky fingers that has the further benefit of being entirely consumed. What happens to the plastic *Microcone*? Is it disposed? Or is it washed? Is this a 'problem' that really needs to be solved?

Forms of novelty design show how designers can become fixated on small so-called 'problems'. This illustrates how design can be a root of negative impact via objects that consume finite resources that add very little benefit to our lives.

Seeing waste

In the context of GS design thinking was vitally important because the problem-sets were not object-based. A program such as GS reinforces the transferable values of SBCD, not in the sense of physically making something but rather the ability to make-things-happen through visualising and then implementing a practical and tangible solution.

Yet it was not this alone that caused a shift in thinking about my practice: one group project focused on going through the levels of the Frank Fenner Building[170] and collecting general waste bins (not recycling) from both communal and personal office spaces. As a group we gathered in the courtyard adjacent to the training room and emptied the contents. The task was to sort through this detritus and identify categories of 'waste' materials—organic, recyclable and what was 'general waste' (that is, stuff going to landfill).

There was a considerable amount of stuff. Even though these were the contents of general waste bins, very little (in theory) could not be composted or recycled. What I was looking at was a) wasted resources destined for landfill; b) a seeming lack of care or understanding toward those things we throw away, which was somewhat ironic considering this was in a school that focuses on environmental issues; c) a wide array of once-use-only items, such as plastic bottles, cans, wrappers and the like, that had been flippantly discarded; and d) a significant problem.

Once waste is noticed it is very hard to then un-notice and raises all sorts of issues and conundrums around current transient and disposable lifestyles. Noticing waste makes one interrogate existing practices, roles and responsibilities and brings up questions of how SBCD might respond.

Milk bottle reuse

Taking cues from GS, the HDPE milk bottles used for the stool's seat webbing were sourced from general garbage bins (not recycling bins) in my local area. Being a side effect of café culture, milk bottles, as it turns out, are incredibly easy to acquire in large numbers and prove to be an accessible 'local' resource. Milk bottles, like most discarded packaging, are standardised to hold specific items of weight or volume. Coming from high-scale industrial production, this in turn provides an

[168] Cameron Tonkinwise, "Cameron Tonkinwise: Sustainability & Design," filmed 5 October 2015 at Carnegie Mellon University as part of the 2011-2012 School of Design Lecture Series: Design the Future, Pittsburgh, PA, video, 1:19:59, https://vimeo.com/31265224.
[169] Donald Corey, *200+ Concepts for Production* (Donald Corey, 2016).
[170] The Frank Fenner Building houses the Fenner School of Environment and Society, which combines the Centre for Resource and Environment Studies and the old Departments of Forestry and Geography at the Australian National University.

opportunity to capitalise on reliable streams of material.

The milk bottle is also connected to domesticity. The reuse in this context is symbolic of much wider domains. Given plastic can be manipulated to adopt just about any guise, it has become one of the most widely utilised materials. Mike Michael writes, “Now, obviously, plastic is a long-standing cohabitant in most Western homes: it has become a stock material out of which a plethora of products are constructed, or partly constructed”.[171]

The ubiquity and widespread use of plastic, however, has opened a plethora of problems. According to an article published by *National Geographic* in 2017, the last six decades since plastic has become a globalised mass-produced commodity has produced some 8.3 billion metric tonnes. Of that, a recent study found of that 9% was recycled, 12% incinerated and 79% sent to landfill or found its way into the natural environment.[172]

Even though 91% of plastic appears to become waste, it is also worth considering the 9% that is claimed to be recycled. This has systemic issues too. As an example, where I live in New South Wales, domestic recycling is collected and trucked to Canberra. According to local council, here it is collected, sorted and then transported to Sydney or Melbourne.[173] From there it is difficult to know where it ends up as much of our waste is sold on to other countries. But, if a product does then in fact make it into the recycling system, recycling is a down-cycling process in that materials are often reconstituted into something of poorer material quality.[174]

Furthermore, if not recycled or reused in some capacity plastic has additional environmental impacts. Plastic never biodegrades, photo degrading over time into smaller and smaller particles.[175] In addition, plastic manufacturing is reliant on finite resources and in the case of what seems like a simple and convenient milk bottle, holds a considerable amount of embodied energy: pumping, extracting, refining, land use, manufacturing and transportation. In turn, this is sold at very low-cost.

A solution to combat this scenario would be a complete redesign of a globalised system and a reassessment of a cradle-to-cradle approach on all domestic mainstream objects. This is a mammoth challenge and an unachievable task for an individual practitioner. However, despite the obviously grave issues surrounding waste and the exploitation of materials, there is an opportunity to salvage reliable and useable material that is more than capable of living a second life.

Wood reuse

The under structure for *Stool Prototype #4* has been made from a wooden bed head that I have identified as Tasmanian Oak, an Australian hardwood. Like the plastic milk bottles, this material was rescued from the waste stream. Given Nadkarni’s overview of the importance of trees, I decided to steer clear of virgin materials even if local such as urban trees like the Blue Spruce.

Processing and then using wood to make something generates waste. Being cylindrical in shape, as standard practice when trees are felled and milled the timber is converted into rectangular slabs or cut into regular pre-determined dimensions. The conversion from circle to rectangular generates wasted material. After the timber is seasoned, it is taken in that rectangular form and worked in a subtractive manner removing more material to achieve a desired outcome. Although wood is an organic material and not harmful like non-biodegradable plastic, it is still a precious and useable commodity. After its

[171] Mike Michael, “Process and plasticity: printing, prototyping and the prospects of plastic,” in *Accumulation: The Material Politics of Plastic*, ed. Jennifer Gabrys, Gay Hawkins and Mike Michael (Oxon: Routledge, 2013), 30.
[172] Laura Parker, “A Whopping 91% of Plastic Isn’t Recycled,” *National Geographic*, 19 July 2017, https://news.nationalgeographic.com/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment/.
[173] "Waste, Recycling & Resource Recovery," www.qcc.nsw.gov.au, last accessed 23 January 2016, http://www.qcc.nsw.gov.au/Council-Services/Waste---Recycling.
[174] Bruce Mau, Jennifer Leonard and The Institute Without Boundaries, "William McDonough on Economy, Ecology, and Equity," in *Massive Change*, ed. by Jennifer Leonard (New York: Phaidon Press Inc., 2004), 45.
[175] “Addicted to Plastic,” Dir. Ian Connacher. Oley: Bullfrog Films, 2008. DVD.

‘useful’ original life, wood can still be made into new things without the use of specialised tooling or intensive recycling processes.

IN SUMMARY: THE RESULT

The motivation behind *Stool Prototype #4* was not to bring the world another stool. It was an attempt to take a familiar form, combine that with ubiquitous useable resources and offer another life through a structural piece of furniture. Designed against the criteria of supporting the body, and through applying traditional craft skills to technology via a physical prototype, I was able to test if an object such as a plastic milk bottle could be reimagined and used in an application far removed from its original function.

Stool Prototype #4 was born from an observation of waste being both an issue for design and the result of design. Revisiting local resources is an important component of sustainability that relies heavily on design as the mechanism through which to intervene. Combining the intentional reuse of devalued material fused with craftsmanship, there is potential to develop a narrative of ‘design affect’ that speaks beyond an object that perhaps can be used as a means to bring increased awareness of current and critical concerns. However small the intervention may be, design has an obligation to challenge existing norms. This prototype has not achieved this.

Unresolved

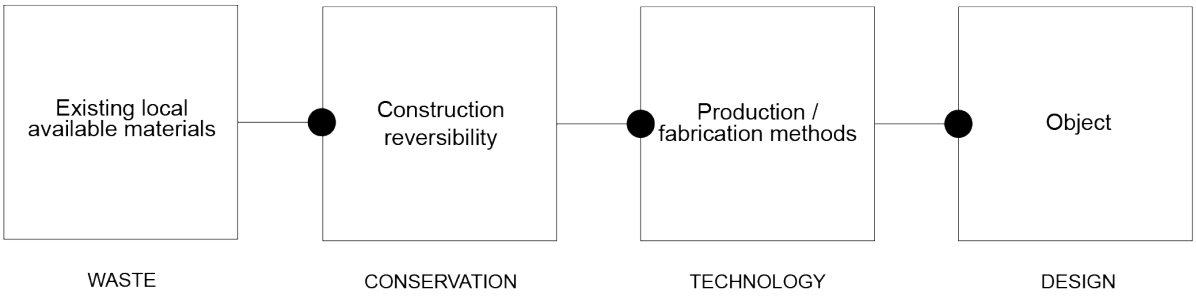
The stool is the fourth prototype in the series and actually functions, though it is restricted in weight capacity due to the constraints of component size available from the discarded bed head. It is also still not fully resolved to a point outside an exhibition setting. To achieve a working stool required countless experimental hours to shape a milk bottle into a structural component. This development was difficult to reconcile at times; using a milk bottle for a seat by means of laser technology seems, on reflection, a disparate connection.

Still bound up

This work was very difficult to push through. As I was prototyping the components and trying to get the materials to achieve what I wanted, I realised, again, that I was still bound to my old approach to practice. *Four Side Tables* was conceived using much the same process. Although employing reuse and repair strategies, having a preconceived idea about what I was attempting to make before starting the process makes for a fraught result.

Working backwards

The idea of construction reversibility derived from conservation, the working back from an end point, becomes important in the process (Figure 5.3). This becomes a question of ‘what can I do’ as opposed to ‘what would I like to do’. Although the available material from the bedhead and milk bottles confined the stool components, the stool still looks like a stool—which is fine to some degree—but the end result is still a generic object that neither speaks of where it came from nor what it is made from.



5.3: Waste-Conservation-Technology-Design.

Some success

The stool was important to complete from the perspective of shifting my practice into a 'problem-based' pursuit. Due to an increased awareness around design and its impacts, this work marks a far more radical departure point: it is an exploration of whether those 'things' we might discard daily—what is deemed as waste or unusable—can be re-worked with craft skills to hold a new and useable value akin to conservation-worthy-objects. This was not achieved but the experiment did result in a conversion of low capital investment.

CHAPTER 6:
CLOUD LIGHTING INSTALLATION

6.1: Cloud lighting installation
Exhibited as part of *Bespoke: Design for the People (*Nov. 2014 – Nov. 2015) at the Museum of Australian Democracy, Old Parliament House Canberra, Australia. 2014.
Materials: Laser cut HDPE from 80 discarded milk bottles, reused monofilament and LED.
Dimensions: 2000 x 900 x 400 mm.
Image by Mark Nolan, Chalk Studio (courtesy Museum of Australian Democracy).

In this chapter I cover a lighting installation made for a specific room inside a cultural institution (Figure 6.1, Appendix 3). With *Four Side Tables*, a commission, and *Stool Prototype #4*, a proposition exhibited in the gallery sector—both practical furniture examples—this installation takes a slightly different approach to making. Although also a commission, the project capitalises on the HPDE material investments made in the previous work and uses the repeatability of a singular component to produce a much larger object. There is a parallel here to standard modes of SBCD, but in this case the 'limited edition' component are the individual panels that make up the form of the light.

This project stems from a conceptual footing that focuses on a) how the consequences of design form political acts and that these are inextricably linked with waste and sustainability; and b) how an object could be situated within a much broader ecology. Sound was introduced into this installation to draw attention to those existing and competing 'other things' that are at the whim of the designer to expose or hide. This extends from *Four Side Tables*, which highlighted the emotional content instilled within an object; the experience of this project, on the other hand, is the introduction of other experiential elements aimed at engaging on a level beyond the object.

Even though a small example and intervention, this work pushes the practice forward by providing a firmer footing in understanding design as a mechanism for potential change. Preconceived ideas about the end result shifts as the installation begins an open collaboration with waste materials and a further letting go of conditioned thinking of what things should be and how they should look.

Premise and background

Cloud is a concept lighting installation commissioned by the Museum of Australian Democracy (MoAD), Old Parliament House, Canberra, Australia. It was displayed as part of the exhibition "Bespoke: Design for the People". MoAD provided a project brief, which, applicable to threads running throughout this project, had a by-line of, "The emphasis will be on design". [176]

Design and politics

Cloud is a site-specific work suspended from the ceiling of what was originally the office suite for the Leader of the Government in the Senate. In his paper *The Role of the Leader of the Government in the Senate,* Senator John Button writes about the responsibilities of leadership: "In a sense, the Senate leader is the person with whom the buck stops…"[177] The hangover from the implications of important decision-making still lingers within the walls of the office. Perhaps because the room is quiet, dark and offers no natural light due to the closed shutters, this space forces the atmosphere to be inward and reflective. Under the hanging installation in the centre of the room there stands a hexagonal table designed in 1926 by the Federal Capital Commission Architects Department referencing the then six states.[178] This table, and office, no doubt bore witness to influential decisions regarding the shape of things-to-come.

Given that design has been established as an important component for how we shape the built environment and what broader affects this has, then it must be considered political by nature.

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[176] This is an excerpt taken from the project brief supplied by the Museum of Australian Democracy: "As part of its new strategic vision, MoAD is shaping a fresh role for Old Parliament House, revitalising it as a new kind of town square for Canberra and the nation. The Museum of Australian Democracy (MoAD) at Old Parliament House and Craft ACT: Craft and Design Centre invite artists to design and produce art works for specified rooms in Old Parliament House. This exhibition seeks to celebrate the beautiful design elements of Old Parliament House; the attention to detail, the beautiful materials, the strong lines and the rich heritage. The brief for this project is broad: design and produce works in response to the historic furniture in the exhibition Suites, Seats and Suits: Fine Furniture of Provisional Parliament House. The artwork will sit alongside existing furniture pieces and may explore the piece itself, the maker, the materials, or the tools. The emphasis will be on design. The installation of the work must be sensitive to the historical fabric and suitable for the tight spaces in the rooms of Old Parliament House. It must be temporary, freestanding, non-invasive and safe for visitors. Ideally it will appeal to, and be suitable for, a broad range of visitors from young children to retirees".
Anne Radimin, Curator Craft ACT: Craft and Design Centre, email to Author, 14 August 2014.
What this brief illustrates is that "design" is still referred to as the means to describe details, materials or tools used in manipulating a form that, in this case, responds to other forms. I saw this opportunity to explore other avenues and meanings for standard and linear definitions of design.
[177] John Button, "The Role of the Leader of the Government in the Senate," *In Parliament of Australia*, February 1992, accessed 12 August 2014, http://www.aph.gov.au/senate/~/~/link.aspx?_id=9A2B2399B59B4EFF838FC0CAFA2C9502&_z=z.
[178] "Hexagonal Table #1999-1275," collection.moadoph.gov.au, accessed 21 August 2014, http://collection.moadoph.gov.au/rooms/m44/objects/1999-1275/.

Design and politics are innately connected. Fry states:

> This means that everything actually or metaphorically, touched by human hands has, by degree, a determinant consequence on the form of the future. Effectively, artifice does not arrive without design and design and artifice combine to render 'the world of our dwelling' political…[179]

In this time of increased environmental awareness clouded by growing waste concerns, politics and design both play a role in influencing and shaping the world. *Cloud* suggests that waste, as a product of design, needs be more tightly governed, regulated and monitored—this is a matter of politics.

To further heighten the experience of being confronted with 'illuminated waste' situated in a room and building that stands for power, an existing clock that manically ticked on the wall was also amplified (Figure 6.2). The objective was to draw attention to time and propose if we are really open to change, then time is against all of us. The idea was also to highlight other elements in the room and to take some focus away from the suspended object, acknowledging that the work is sitting within a broader context.

6.2: Cloud lighting installation (detail).
Image by Mark Nolan, Chalk Studio (courtesy Museum of Australian Democracy).

[179] Fry, *Design as Politics*, 5.

Materiality

Cloud capitalised on the investment made in manipulating reused HDPE milk bottles for *Stool Prototype #4.* Seeing this as an opportunity to activate a now dormant political space, a similar approach was followed and eighty plastic panels with a hexagonal pattern responding to the shape of the table below were laser cut. The internal lighting is one single off-the-shelf LED strip that doubled as a structural spine to assist in maintaining the cloud shape and to function as a suspension point.

Looking up

The purpose of suspending from the ceiling was for the viewer to look up. Waste is generally identified as a physical thing that inhabits the ground or is buried in the ground. A cloud is so embedded within our psyche and has become a symbol of life on earth, like other naturally occurring phenomena such as the sun. Clouds come and go, are temporal in nature and simply just exist and have always just existed; a parallel to how we think about our natural environments and the disconnection from the affects that humans have on just about everything.

Conceptually this work toys with the notion that most life-sustaining systems are hidden from view. Many life-threatening or damaging things such as air pollutants are also hidden from view—they are simply 'up there' amongst natural elements. It appears paradoxical to make a cloud, an ephemeral 'object', from plastic, a permanent and potentially damaging material.

Transience

As I stated earlier in this exegesis, perhaps designing requires reconciling that at some point into the near or distant future all work becomes part of mass-transience that could end up as waste. *Cloud* represents this. It can be easily unstitched and at worst, thrown into the recycling bin. This is a significantly different line from *Four Side Tables* and *Stool Prototype #4,* as both were conceived with longevity in mind. Arguably those case studies are addressing different requirements but considering the crisis of stuff, then perhaps it is appropriate for designing to shed the idea that work needs to last forever and accept that it can also be in a state of transience—much like that swell of stuff and waste, and much like a human life itself. Walker states: "…designing products to last fails to acknowledge the relatively rapid changes that occur in aesthetics and taste…"[180]

IN SUMMARY: THE RESULT

Cloud was not intended as a hard-edged political statement. It was an opportunity to offer thinking and an alternative use of materials. The aim was to provide a point of view through a physical representation driven by intent, meaning and symbolism just like the hexagonal table below the installation.

Open dialogue

What was important in this project was letting-go to have a direct and open dialogue with the materials. Each HDPE panel was individually stitched together from re-used monofilament found in a bin—underpinned by design reversibility—to create a cloud-like form that unpredictably evolved purely from the laser pattern. Unlike the side table or the stool, I had no pre-conceived idea about how this project would manifest and simply let it dictate its own form. Other than the prescribed hexagonal pattern on the panels, I worked in a free form manner.

Time

Working in this way requires time; time to think, time to respond, time to make. A parallel can be made with *Four Side Tables* as this was also a work resultant of time—the work dictated the timeframe as opposed to the timeframe dictating the work. From experience, industry is so heavily

[180] Stuart Walker, *The Spirit of Design: Objects, Environment and Meaning* (Oxon: Earthscan, 2011), 146.

governed by time and constraints and as such many projects are never realised to their absolute best. ‘Slowing down’ in this case then offers a counter to a contemporary fast-paced setting seemingly always driven by deadlines and immediate responses, and the production of more and more stuff.

Time is important here; not just in the fact that time is a measure (or construct) and that over time humans have had a significant impact on planetary ecosystems, but also allowing or having time to change or having time to attempt to do good work. This also raises other questions of how we might value time; wasteful practices can be attributed to “not having the time” and represent the effects of so-called convenience.

This is not to say that *Cloud* is good work; what is presented is far from finished. This is another marker for a project that is attempting a process of using design as the catalyst to respond to a world full of stuff.

CHAPTER 7:
CRAFTING WASTE

7.1: Crafting Waste.
Solo exhibition at Craft ACT: Craft & Design Centre, Canberra. 2016.
Supported by Rolfe Classic BMW.
Image by Saini Copp.

Crafting Waste, a solo exhibition at Craft ACT: Craft & Design Centre that was supported by Rolfe Classic BMW, is a body of work that provides a firmer foundation for re-evaluating SBCD (Figure 7.1, Appendix 4). The three works leading up to this point make it clear that an increasingly explicit approach to working with 'waste' is needed to push the project forward. As such, *Crafting Waste* established some strict parameters:

a) I was only to use what could be found on the side of the road locally on my travels to and from my home in Queanbeyan[181] ('local' materials; limited palette);
b) To augment these finds with the manipulation or re-contextualisation of objects and materials plucked from local waste bins (active engagement with waste);
c) Focus mainly on furniture and objects that make up a domestic setting (consider the volume of transient objects that flow through our homes).

This brief was relatively simple and a further attempt at:

1) Engaging with issues of waste through reuse and repair;
2) Exercising another perspective of 'design-reversibility', that is creating divergent strategies for stuff at the end of its 'useful' life;
3) Notions of making do;
4) Challenging perceptions as to how and what objects might be, look like or how they are crafted by allowing the process to dictate the work; and
5) To engage SBCD as the vehicle for physically manifesting concepts and ideas that emanate from beyond a single discipline, however, using a discipline as the mechanism for exploring those concerns.

Crafting Waste was an opportunity to build a cohesive body of work that engaged in the re-making of existing objects that have lost perceived value. It was also a chance to work on the critical spectrum of design and to use the objects as vehicles for addressing other pertinent concerns.

This chapter highlights changes in my approach to practice. One question that has to be asked so far, however, is *what does any of this actually change?* Constructing more stuff out of other stuff appears counter intuitive to developing divergent strategies for SBCD considering that design is responsible for so many negative consequences. To address this gap, one small but significant component of this exhibition was to trial a micro-scale experiment in community engagement. By providing instructions on how to make an object from unused stuff lying around, this work takes a step away from a designer being a sole creator of an object and starts to extend the practice from just making objects, to consider how an object has capacity to engage with a community.

Premise and background

The idea of the exhibition was to create a domestic setting, a 'lounge room' of sorts. Most of the materials or objects reused or repaired in the exhibition are a by-product of domesticity so it seemed logical to reimagine this setting considering our living spaces have now become the site for globalised consumption and resulting waste. For the exhibition this included standard recognisable furniture items: a bench seat, side table, lighting and ottomans. A short film, focusing on process and the motivating factors behind the exhibition, played on a television set providing a central focus for the arrangement of the work.

The work created for *Crafting Waste* is a far more direct exchange with materiality. Discarded and weathered or rotting objects found on the side of the road, thrown away used clothes and bits and pieces salvaged by diving into general waste bins or skips—these materials were rescued and reimagined (Figure 7.2 and 7.3). This carried through the whole exhibition right down to labels for the work, which were made from discarded beer cartons. The only 'new' things were the LED bulbs used

[181] Queanbeyan is in the state of New South Wales and sits on the border of the Australian Capital Territory.

in the lights (discussed below), which were purchased from independent local retailers, not national chains.

Bringing ‘waste’ back into a domestic environment is also an attempt at shifting the potentials and possibilities of innocuous stuff that we have turned a blind eye to. Considering once a physical thing comes into the world it leaves a permanent trace—and a permanent trace has consequences—this is also an analogy for design as a conundrum of cause and effect.

Process and objects

Other than creating a setting, when I began it was not clear about how the work was going to take place. It was daunting to give control away entirely to the process. This was similar to the process exercised in *Cloud* but on a much larger scale, with disparate materials, and wholly reliant on what objects and materials could be found. It also hinged on one’s ‘creative’ capacity to find life and new potentials in those discarded things. In retrospect I need not be so concerned. Collecting materials is just like purchasing whatever we want from anywhere across the globe; if looking hard enough, or in the right places, discarded stuff shows itself begging to be utilised in some way. As a society we throw nearly anything and everything away so if need be—and if it’s not out on the curb or in a bin—there is always the hardware store of all hardware stores to fall back on, the tip.

7.2: Stuff on the side of the road (process for Crafting Waste).
Still from the short film Crafting Waste. 2016.

7.3: Stuff out of bins (process for Crafting Waste).
Still from the short film Crafting Waste. 2016.

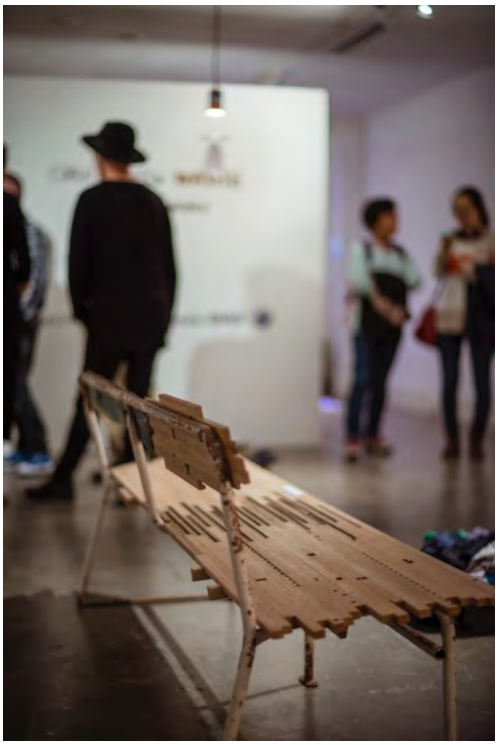
7.4: Bench seat from the side of the road (process for Crafting Waste).
Still from the short film Crafting Waste. 2016.

Bench seat and side table (one-off)

One focus for *Crafting Waste* was the combination of one-off pieces and 'products' to align with standard SBCD modes of practice. The bench seat that featured in the show—a one-off—was found on the side of the road and repaired using a busted bookcase and short floorboard offcuts, also all found on the side of the road (Figure 7.4). The bench seat frame and existing components (half a weathered back rest) were not altered in any way and left in their original state, just repaired with a new seat. This was so not to interfere with the bench seat, or to refurbish the metal or paint work, but rather make the point that like our own human existence perhaps the objects we make could be transient. It was also to raise the question of what is gained or lost through discarding instead of adapting, and working with an object that still holds the marks of its past life and being respectful of this.

I arranged the materials for the seat and half backrest in a way that exposed how the other two objects had been originally made (for example, the joinery techniques for the bookcase). The seat has no start or end point, as what I was trying to achieve was a 'thing' passing through the frame that referenced that transient nature of stuff (Figure 7.5 and 7.7). These interventions are not permanent and do not change the original frame in any way. Allowing the object additional future lives by opposing the imposition of permanence, the bench can potentially be 're-made' when circumstances change, or returned to the kerbside in its new 'valued' state to re-join a stream of materiality.

A wire-frame side table with no top was treated in the same manner (Figure 7.6). This used smaller offcuts from random bits of wood such as skirting boards and broken old chairs, joined together lengthways and crossways to create a surface.



7.5: LL Bench Seat.
Materials: Reused found materials and objects: existing metal frame, wood (various species), cord. 2016.
Dimensions: 2080 x 550 x 740 mm.
Image by Saini Copp.

7.6: Side Table.
Materials: Reused found materials and objects: existing metal frame, wood (various species), cord, electrical wire, rubber bands. 2016.
Dimensions: 930 x 450 x 520 mm.
Image by Saini Copp.

7.7: LL Bench Seat (catalogue image).
Image by Halie Rubenis.

Lighting (product)

I also experimented with a whole range of different lights. Lighting is fundamental—our world is either dark or light—and I wanted to create something that potentially could offer an immediate response on a visceral level yet was still a recognisable form that paid respect to its previous life. Using cardboard, tin cans, plastic milk bottles, wire, strings, rubber bands, existing light fittings, all sorts of salvaged stuff, I tried different combinations and experimented with many ways of bringing seemingly disparate materials together to create 'products'—that is, repeatable objects. This process is akin to bricolage; the method of constructing from diversity, making do with what exists and responding to that which occurs.[182] In this instance it is waste and its environmental, social, political, cultural and economic impacts.

[182] David Crouch, "bricolage, poetics, spacing" *Humanities* Volume 6, Issue 4 (2017): 95.

Many of these experiments never made it into the show. The process was difficult, resulting in a constant questioning of 'why': is the work just perpetuating the problem by contributing to that ebb and flow of stuff?[183]

7.8: Tin Can Lights.
Materials: Reused found materials and objects: tin can, laser cut milk bottle (HDPE), black cord, wood, existing light fittings, LED bulb. 2016.
Dimensions: Size varies.
Image by Saini Copp.

Eventually, however, something started to emerge that made some vague sense and more work followed. This manifested in a range of tin can lights (Figure 7.8 and 7.10). To not be ignorant here, world famous German lighting designer Ingo Maurer released a product titled "Canned Light" in 2003. The can that houses the bulb is specifically printed with the label "Campbell's Tomato Soup", in homage to Andy Warhol's famous 1962 pop art work "Campbell Soup Cans".[184]

Others such as American studio-craftsperson Garry Knox Bennett also have produced a series of tin can lights.[185] These are different again as they are displayed upright as a normal can would but with additional elements such as paintbrushes, toothbrushes, and random odds and ends—signs of

[183] This internal unrest and questioning, very much like how design both creates and ultimately destroys, is akin to the well-known theory of "cognitive dissonance". This theory was developed by social psychologist Lester Festinger in the 1950's, which, although complex, in brief can be explained as having competing or contradictory beliefs. For example, within this project I knowingly set out to reconcile with the making of more stuff considering that it is actually stuff that is a problem. But the way I am setting out to do this is *through the very act of making more stuff.* This is further compounded by experimenting and prototyping, which ultimately then produces more and more stuff. This is difficult to reconcile, much like a wicked problem, but as Festinger also reminds us: "Very few things are all black or all white; very few situations are clear-cut enough so that opinions or behaviours are not to some extent a mixture of contractions" (Festinger 1957, 5). The act of design is no different.
Lester Festinger, *A Theory of Cognitive Dissonance* (California: Stanford University Press, 1957), 1-20.
[184] "Canned Light," ingo-maurer.com, accessed 5 May 2016, www.ingo-maurer.com/en/products/canned-light.
[185] "Garry Knox Bennett Furniture," www.gkb-furniture.com, accessed 5 May 2016, www.gkb-furniture.com/home.php?series=7.

domesticity and indicators of the maker. The light components are nestled and draw attention to these objects but the light source itself is not necessarily the primary function.

My intent was neither as a reference to these works nor as precedents. The work produced was simply a matter of what could be salvaged that was in abundance and regular in both supply and in physical volume.

Most of us have tinned food of some description in the cupboards. Most of us also use the contents of steel cans weekly for cooking. They are common domestic objects in mass circulation. Yet it is estimated that only a small proportion of these cans, which are 100% recyclable, ever make their way into the recycling stream.[186] Considering further that the cans reused in the exhibition have come from overseas—not one contained local produce—firstly, this is a considerable amount of energy for something that is hindered from a second life; and secondly, also considering that, for example, we can get a can of 'Italian' tomatoes from a chain supermarket for less than $0.90, the cost differential between production and consumption is exponentially disproportionate. Someone somewhere is wearing the true costs of this transaction and it is neither the consumer nor the retailer.

7.9: Tin Can Lights.
Image by Saini Copp.

[186] According to *Clean Up Australia*, each Australian jettisons 3.5kg of steel cans to landfill. Considering that steel is infinitely recyclable, albeit highly energy intensive, this is a staggering amount considering the current Australian population of approximately 24 million people. This would equate to an estimated 84,000 tonnes of wasted resources.
"Steel and Aluminium," www.cleanup.org.au, accessed 3 July 2016, www.cleanup.org.au/PDF/au/cua-steel-and-aluminium-recycling-fact-sheet.pdf.
Australian Science report that of the total number of steel cans used, around 30% make it to the recycling stream.
"Where Are we on Recycling and Is It Enough," www.australianscience.com.au, 22 May 2015, www.australianscience.com.au/news/where-are-we-on-recycling-and-is-it-enough/.

When the function of a tin can is considered, like a plastic milk bottle, it is actually an excellent specimen of design. Engineered with the least amount of possible material yet to yield maximum strength; manufactured using efficient technological processes; and designed to fit within a well-oiled global system of transportation, are but several key attributes. These are fine examples of anonymous human ingenuity, but it is not the object that is of interest. Rather, it is that design's one affordance that holds all the value: the safe transportation of its contents across the globe. Once consumed, that single affordance ceases to exist, and the object becomes a member of another exponentially expanding population of design specimens, which, as we know, is waste.

7.10: Milk Bottle Light.
Dimensions: Reused found materials and objects: tin can, sandwhich pressed milk bottle (HDPE), cardboard, black cord, wood, existing light fittings, LED bulb. 2016.
Dimensions: Size Varies.
Image by Saini Copp.

From a practical perspective tin cans make for excellent heat sinks.[187] Most of the lights produced from the cans also still contained their original labelling or exist as they were salvaged. Not all are in prime condition, being previously damaged in their travels, and one of the cans had lost its labelling which almost seemed it had been stripped of its identity.

A HDPE shade laser cut from a milk bottle was added, capitalising on techniques honed in previous projects, and suspended from the opening of the can to reference urban waste nonchalantly floating

[187] All lights generate heat, even LEDs. A heat sink refers to a device or fitting that absorbs heat produced from the light. Many lights have independent and dedicated heat sinks but given that a tin can is entirely from metal, they provide plenty of surface area to distribute this heat.

through the streets. Through a simple toggle system, the shade's shape can be altered (Figure 7.9). This was combined with existing electrical fittings and new energy efficient LED bulbs.[188]

Given the materials, each light is slightly different in detail; they are however essentially all repeatable as the disparate components used are standardised.

Ottomans (product)

Also featured in the exhibition was a series of ottomans made from camping guy ropes and discarded clothes (Figure 7.11). *The Ottomans* were a response to Australia's fixation on fast fashion trends. The ABC's *War on Waste* campaign reported that Australia throws away 6 tonne of textiles every ten minutes.[189] In addition, *ABC News* noted that, "Australians are the world's second largest consumer of textiles," trailing just behind North America.[190] New clothing can be purchased at next-to-nothing prices. Perhaps it is not surprising that fashion is viewed as a consumable throwaway item.

7.11: Ottoman.
Materials: Reused found materials and objects: worn and torn clothes, reused camping guy ropes.
Dimensions: Size Varies.
Image by Saini Copp.

[188] Perhaps ironically, it is interesting to note that planned object obsolescence was born from the lighting industry. In the 1920's a coordinated group of major global electrical manufacturers banded together to create the Phoebus Cartel. This consortium, headed by the then chairman of Osram, William Meinnhardt, sought to control, standardise and mandate the lifespan of a light bulb. Any company operating outside of the rules of the cartel, or found to be producing a bulb that lasted longer than the strict 1000-hour lifespan, was vulnerable to penalties ("Episode One," *The Men Who Made Us Spend*, Writ. Jacques Peretti, British Broadcasting Corporation, 2014. TV Series). It is also of note that in the Australian Capital Territory (ACT), currently, a light bulb falls under the category of "hazardous waste". Styles of bulbs such as incandescent and halogens, according to the ACT Government website, are encouraged to be disposed of via the garbage bin ("Get Re-Psyched About Recycling," www.act.gov.au, last updated 19 December 2017, www.act.gov.au/recycling/a-z_waste_and_recycling_guide/l).
[189] "Episode 3," *War On Waste,* Australian Broadcasting Corporation, 2017. TV Series.
[190] Fiona Pepper, "Australia's obsession with new clothes and 'fast fashion' textiles hurting the environment," *ABC News*, 12 January 2017, www.abc.net.au/news/2017-01-12/australias-obsession-with-new-clothes-hurting-the-environment/8177624.

Canberra resource centre The Green Shed (TGS), a private company operating at two waste disposal sites, is an example of the battle facing clothing disposal. TGS give away dumped clothes for free.[191] There are several massive cages at one of their sites clearly suggesting that most discarded clothes have little perceived value; considering the huge volume that gets dropped off, there is simply too much to process for reselling.

There is more to the equation than a piece of expendable clothing. Most fabrics that make up our clothes are blended. According to the *World Apparel Fiber Consumption Survey* (2013) synthetic fibres account for more than half of the world's consumption of fibres. Cotton, the other main material for textiles, sits at around a third of the world's total consumption.[192]

Synthetic blends are derived from coal and petroleum.[193] When these fabrics are washed, a significant amount of plastic debris, micro-plastics less than 1mm in size, are released into the sewage (greater than 1900 particulates per individual piece of clothing).[194] These fragments end up in waterways and then the ocean, causing significant threats to delicate marine wildlife.[195] These pollutants then go through the food chain and end up on our tables in the food we eat.

It is not only synthetic fibres that cause problems. Cotton farming, for example, produced by over ninety countries worldwide, is massively water intensive. To produce one kilogram of cotton requires around twenty thousand litres of water. Cotton relies heavily on chemicals and given that it is such a water-greedy crop, has an impact on river basin systems that further affect surrounding balanced ecological and social systems.[196] Agriculture is also at the heart of many developing nation's economies.[197] Given that wages are significantly lower than in the west, farming and selling at low prices to supply a fast-fashion economy exploits those nation's finite resources. It also takes advantage of human labour and leaves behind depleted resources unable to support future generations.

Throwing away clothing almost seems like a crime against humanity and the environment, but the alternatives are also limiting. Even if clothing maintains some value for its owner but is in need of mending, high labour costs (such as those in Australia) can prohibit repair-ability.[198] Replacements can be cheaper, and clothes go so quickly 'out of fashion' as each season brings with it new trends.[199] Unless the owner of the garment has the necessary skills or compulsion, repair is often not an economically viable option.

Making *Ottomans* from discarded garments is clearly not going to solve the issue. There are, however, parallels to the fickle trend-driven nature of the furniture industry, which also relies heavily on a turnover of product. Making an object with the primary function of sitting, from discarded clothes, which supports a certain rear part of the body, does have a dig at how we view objects and the disconnection from the unknown faceless people who made the sacrifice to allow us to purchase something we see as consumable. It also questions why and what we sit on and why one object has more value over another.

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[191] "The Green Shed," www.thegreenshed.net.au, last accessed 20 March 2017, www.thegreenshed.net.au.
[192] Shangnan Shui and Alejandro Plastina, *World Apparel Fibre Consumption Survey 2013* (Washington: International Cotton Advisory Committee, 2013), 2-4. www.icac.org/cotton_info/publications/statistics/world-apparel-survey/FAO-ICAC-Survey-2013-Update-and-2011-Text.pdf.
[193] Jane Milburn, "Making a material difference," *Journal of the Home Economics Institute of Australia* Volume 22, No. 1 (2015): 2-9.
[194] Mark Anthony Browne, Phillip Crump, Stewart J. Niven, Emma Teuten, Andrew Tonkin, Tamara Galloway, and Richard Thompson "Accumulation of Microplastic on Shorelines Worldwide: Sources and Sinks," *Environmental Science and Technology* Volume 45, Issue 21 (2011): 9175–9179. doi: 10.1021/es201811s.
[195] "Addicted to Plastic," Dir. Ian Connacher. Oley: Bullfrog Films, 2008. DVD.
[196] "Cotton A Water Wasting Crop," wwf.panda.org, last accessed 12 February 2016, wwf.panda.org/about_our_earth/about_freshwater/freshwater_problems/thirsty_crops/cotton/.
[197] Sethi Narayan, Sanhita Sucharita and Kumar Hemanta Pradhan, "Environmental Implications Of Contract Farming: The Case Of Cotton Cultivation In Odisha," *Journal of Economic Policy and Research* Volume 11, Issue 2 (Apr/Sep 2016): 104-117.
[198] Eleni Kalantidou. 2015. "Handled with care: repair and share as waste management strategies and community sustaining practices." In *Proceedings PLATE Conference: Product Lifetimes And The Environment*, Nottingham Trent University, June 2015. https://www.plateconference.org/handled-care-repair-share-waste-management-strategies-community-sustaining-practices/.
[199] Jane Milburn, "Valuing old skills in a new world," *Journal of the Home Economics Institute of Australia* Volume 23, No. 2 (2016): 13-20.

The Dutch designer Tejo Remy's *Rag Chair* released in 1991 for Netherlands brand Droog provides a precedent for these *Ottomans*. Remy's chair comprises used clothing secured around an MDF[200] frame using metal straps.[201] The chair is made from 15 bags of rags and retails for approximately $5K (plus shipping) and weighs in at 56 kilograms.[202] Arguably what gives the *Rag Chair* value is the designer himself, as the design industry as a whole is notorious for promoting designers to celebrity status. Perhaps when this chair was initially conceived over 25 years ago, it was during a time when increasing awareness around environmental issues was forcing the Dutch government to reassess how it dealt with issues of waste.[203]

The *Ottomans* I produced are also in response to political, social, environmental and cultural concerns but are far cruder, simpler, and lighter than Remy's offering. I put a significant price on the work to represent the myriad of hidden costs involved. Knowing no one would spend money to acquire work like this, instead, as a provocation, I provided instructions on how to make your own *Ottoman*.[204] The DIY instructions were aimed at offering: a) the opportunity for someone else to adapt the idea at their own will in response to individual circumstance; b) notions around the scalability of ideas as one person can only do so little, it is community that makes change; and c) challenging the authoritative role of design by blurring the lines between ownership, authorship and intellectual property.

Film

Accompanying the lounge setting of the main furniture items, a 5-minute film provided contextual frameworks for the exhibition.[205] This featured extracts of the motivations behind the work and the processes employed such as dumpster diving, collating disparate materials and making in the studio (Figures 7.12 – 7.15).

Using film (and TV) for communicating intent further augments the agency of a static object. As a digital platform it lives well beyond the object and can act as a mechanism by which to connect with a community through practice. Documenting conceptual underpinnings, the thinking behind work and resulting processes are perhaps the most important parts, more so than the displayed finished pieces.

The work of London-based design duo *Studio Swine* is an example if this approach. SS have created many short films that focus on the context and process in which an object is made, not just the end product. As evidenced by their work being awarded at international festivals such as Cannes[206], documentary-style film relating the impetus of ideas and how these concepts manifest is an effective tool for broader engagement. In an interview with *Dezeen* SS co-founder Alex Groves made the comment that:

> Increasingly companies are working with designers for PR rather than to make a mass-produced product, so they're looking to designers to be 'designers of mass communication' rather than 'designers of mass production'…[207]

[200] MDF refers to "Medium Density Fibreboard," an industrially produced and commonly used sheet material comprised of binding wood pulp together with wax and resins under high heat and pressure.
[201] "Rag Chair," remyveenhuizen.nl, last accessed 12 February 2017, www.remyveenhuizen.nl/work/furniture/ragchair.
[202] "Rag Chair," www.droog.com, last accessed 5 March 2017, www.droog.com/webshop/product/rag-chair.
[203] E. Dijkgraaf and R Gradus, "An EU Recycling Target: What Does the Dutch Evidence Tell Us?" *Environ Resource Econ* 68 (2017): 501. https://doi-org.virtual.anu.edu.au/10.1007/s10640-016-0027-1.
[204] On the accompanying exhibition label I wrote: "Here are the instructions on how to make these: 1. Collect any items of clothing that are no longer being used (torn or worn); 2. Fold, stack or arrange in any configuration; 3. Pull a rope tight (or an octopus strap) around the stack of clothes and ties off; 4. Take a photo of the final result and share via Instagram…
[205] This was filmed and edited by Brett Lamb, a Melbourne-based educator, writer, pod cast host and media practitioner. This short film can be accessed here: www.youtube.com/watch?v=rFlVRxGHXiw&feature=youtu.be.
[206] "About," www.studioswine.com, last accessed 5 March 2018, www.studioswine.com/about.
[207] Dan Howarth, "Designers turn to film, becoming agents of "mass communication instead of mass production," *Dezeen*, 21 March 2016, www.dezeen.com/2016/03/21/studio-swine-alex-groves-interview-designers-using-film-agents-mass-communication/.

7.12: Short film, Crafting Waste.
Short film Crafting Waste. 2016.
Image by Saini Copp.

7.13: Short film, Crafting Waste
Short film Crafting Waste. 2016.
Image by Saini Copp.

7.14: Short film, Crafting Waste.
Short film Crafting Waste. 2016.
Image by Saini Copp.

7.15: Collating stuff (process for Crafting Waste).
Still from the short film Crafting Waste. 2016.

THE RESULT: IN SUMMARY

What some people said and what it means for the project

Crafting Waste was presented publicly to seek feedback. To provide points to discuss in relation to how the practice is shifting and what it might now mean, in this section I will reference comments made externally about the work and make comparisons against the motivations originally set out for the exhibition.

In the essay that accompanied *Crafting Waste*, design psychologist Dr Eleni Kalantidou made the point that engaging with issues, such as waste, requires a process in which an individual (or maker) becomes connected with their surroundings through an increased consciousness of care and responsibility. Kalantidou also suggests that fragments of waste are still alive:

> …alive things need to remain alive. This mode of crafting grounded in reviving via re-imagining, enabling instead of imposing and retaining instead of producing negotiates the unsustainable in ways that beg for attention…"[208]

There are several points to be made here. Firstly, Kalantidou places the word "crafting" in this account, which is suggestive that the capacities of a high-level of skill, such as those attributed to SBCD, is an important aspect of rebutting unsustainable ways. Secondly, crafting comes from re-imagining which points to an engagement with a process of creativity and finding new life in discarded things, creative process being another attribute of SBCD. Thirdly, keeping things in circulation via retaining and not imposing.

Nicol reiterated in the exhibition opening speech:

> …his work is about engaging with the reality of the here and now—the crises of our age … When I look at this work I see craft at its best—skill, careful respect for materials, lightness of touch with a rare capacity for elevating the object's voice

[208] Eleni Kalantidou, *Crafting Waste* (Canberra: Craft ACT Craft & Design Centre, 2016). Exhibition catalogue, 26 May 2016, craftact.org.au/blogs/past-exhibitions/crafting-waste.

> above his. I am impressed by his willingness to let go of much safer approaches and aesthetic frames to afford higher ideals.[209]

The purpose of using these accounts is to not support the supposed merits of the work, but rather provide a point of departure as to how the practice is transforming. This raises questions of a) how is it changing; b) what is the contribution being made by doing this work; and c) so what?

How practice is changing

What is the difference then between *Four Side Tables,* covered in Chapter 4, and the *Ottomans*? The obvious change is in aesthetic qualities. One is highly crafted and fits into Modernist ideals of design, and the other is, simply put, just a bundle of used rags. One is polished work and made for longevity, the other is gritty and made to be temporary. Yet both come from a place with the same level of skill and initial overarching motivation.

Four Side Tables does exactly what Kalantidou expresses as unsustainable, an imposing authoritative voice by way of 'giving form' instead of allowing the process and what is on hand to guide the result. Although *Four Side Tables* might appear to be free in the sense that the materials are manipulated to achieve a desired result, it is actually governed more so by constraints perpetuated by adhering to a specific set of pre-determined rules, ideas and existing notions. That is, something looking or being made in a way that expresses some type of 'value'.

A letting go of these ideals, on the other hand, liberates the *Ottomans*. The clothes that make up the *Ottoman* are manipulated to a degree but there is very little energy expended in performing this. No laborious processes or technical prowess is required. Additionally, the original forms have not been altered; the bundles can be undone and can still function as clothes. Being temporal as well means the *Ottomans* can be constructed and changed by whomever and whenever, as instructions were provided as means to break down a barrier about what defines a work of design. This 'democratic' approach parallels Papanek's notions that regardless of status, profession, culture, society and the like, collectively we are all designers and that our actions, all of the time, have cause and effect.

The *Ottomans* also start to speak of something else beyond their physicality by taking more of a critical stance. Art critic for the *Canberra Times*, Kerry-Anne Cousins, when discussing *Crafting Waste*, acclaimed the *Tin Can Lights* as "sophisticated design" yet conversely critiqued the *Ottomans* by writing:

> His ottomans, however, fail to convince that they are a viable alternative to conventional furniture. Made from loosely tied together, torn and worn old clothes, they lack design finesse and look like exactly what they are—bundles of old discarded clothes.[210]

This is a fair comment as the *Ottomans* are not refined works; but they were never meant to be. The work is the means for exploring other ideas and greater issues. The work in of itself may not be 'great' but this is also ok; arguably the significance lies in the process of thinking and the knowledge that is acquired through discussions. How are they not viable considering the mountain of discarded clothes? And arguably being conventional is what got has gotten us into trouble in the first place. There is definitely a crisis in fashion that continues unabated.

Another value of the work is that it challenges conventions and preconceptions by raising questions, in this case, about what might define the nature of furniture.

LL Bench Seat perhaps sits between *Four Side Tables* and the *Ottoman*. It merges the higher end of craft with existing objects through a level of detail. Both *LL Bench Seat* and *Four Side Tables* are

[209] Rohan Nicol, "Crafting Waste" (Canberra: Craft ACT Craft & Design Centre, 26 May 2016), Speech.
[210] Kerry-Anne Cousins, "Aesthetics in a Time of Emergency: Craft as Political Commentary," *Canberra Times*, 3 June 2016, www.canberratimes.com.au/act-news/canberra-life/aesthetics-in-a-time-of-emergency-craft-as-political-commentary-20160530-gp70er.html.

considered. Both works took time to make. Unlike *Four Side Tables*, and for that fact *Stool Prototype #4*, there was no prototyping, no mock-ups of joinery and no specific jigs for making. It was also completed in a way that is still reminiscent of the bench's past life, being made whole by only adding that which was missing. It could have been simple enough, and perhaps more time effective, to remove the old backrest and replace the entire part with something new and follow this through into the seat. Considering the steel is in relatively good condition, albeit with some surface rust and peeling paint, it lends itself to a quick strip down and re-paint. But the point is not to make the work 'new' again.

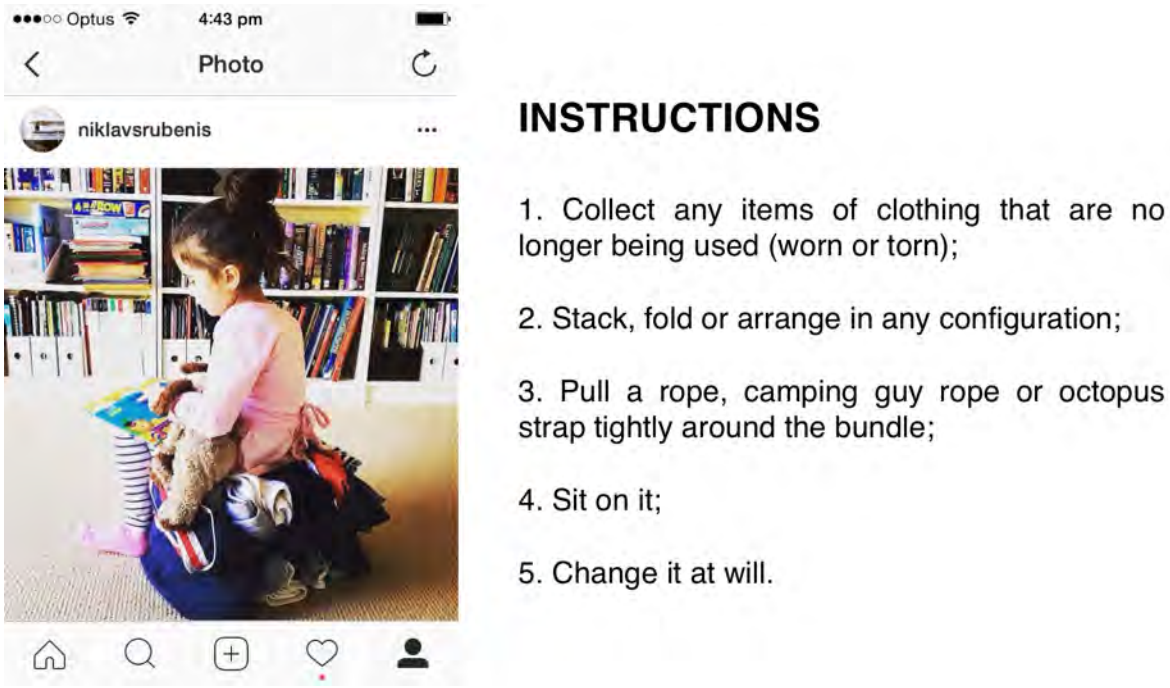
This process largely breaks down conventions of authorship, as the material palette has come from somewhere else and unbranded, designed by someone else and manufactured by someone else. The bench has lived a previous life, as evidenced by its weathered parts, knocks and peeling paint. To accept this requires taking a much quieter approach, placing ego to one side and only performing what is required. There are of course decisions that are made around aesthetics, but the material that is on hand and how it is then assembled dictate this. There are hundreds of ways this bench seat could have been reinterpreted; its revival is happenstance—but still intentional—and not predetermined by existing notions.

Small-scale community engagement

The questions need to be asked: is making more stuff going to solve the issue of waste? Does the work in this exhibition have any impact beyond the walls of a white gallery? The straight up answer is *no.*

The most powerful repercussion that has come from redirecting my practice so far, and this exhibition, is the beginnings of small-scale community engagement. Figure 7.16 is a snapshot from a Mum who posted an image via Instagram of her daughter making her own *Ottoman* from her favorite clothes. Although a micro intervention, it does highlight the criticality and accessibility that can be exercised through studio-based craft and design. It also illustrates how individuals can hack into and disrupt the flow of production and transient materiality. The *Ottomans* may well "fail to convince" but this small experiment, via provided instructions, presents as an opportunity for broader engagement (Figure 7.17). This is an unexpected result but an outcome that could be scaled and used as a driver for further inquiry.

Crafting Waste marks a further shift in practice from making to re-making. And as to be discussed in the next chapter, re-making is further combined with community engagement. This takes SBCD into the realm of design as a facilitative practice that links people from communities together over common issues, which, important to this project, that common issue of waste.



7.16: Instructions on how to make your own Ottoman.
Image from Instagram. 2016.

7.17: Instructions on how to make your own Ottoman (exhibition).
Image by Saini Copp.

CHAPTER 8:
OBJECT THERAPY

In this chapter I discuss a collaborative project titled *Object Therapy* (OT). This project is an investigation into broken objects and their repair by design. OT revolves around the public submitting damaged or broken objects for creative repair, and designers, artists and craftspeople performing those repairs.

OT extends SBCD's attributes and marks another shift in approaching practice. A parallel to this project can be drawn to the notions of design-reversibility that arose through *Four Side Tables* and *Stool Prototype #4*, but on much larger scales. Instead of starting with the object in mind and then forcing the materials to suit a particular ideal or vision, the design process begins in reverse. In respect to OT, the reverse is far broader: firstly, that of a common concern (waste); secondly how then to engage a community in response to those concerns. As discussed, this is the role of design and marks another shift in an approach to practice from the object being an end point to an object being an enabler in that it acts as an anchor for broader exchange.

Premise and background

Object Therapy[211] first began in 2016. It was a collaboration led by designer and academic Guy Keulemans[212] and social entrepreneur Andy Marks,[213] and me as a research partner.[214] It was initiated as a research and remaking project, with a resulting exhibition, that debuted as part of a year-long cultural festival *Fix and Make* at Hotel Hotel in Canberra, ACT.[215]

OT was developed as an outreach project where members of the local Canberra community were invited to submit broken objects for transformative reuse or repair. Local, interstate and international craftspeople, designers and artists conducted these repairs. The project was designed to: a) challenge and re-evaluate the potential of transforming broken objects into items of value; b) discuss consumption patterns and to question perceptions of waste through assessing the possibilities of repair as a viable creative process; and c) gauge how creative practitioners would respond to broken objects.

Process

The project began with an expression of interest callout to the general public via a series of media channels. Interested participants filled out an online form, provided a brief description of their broken

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[211] Australian National University ethics clearance *Protocol 2016/332.*

[212] As stated on his website: "Guy Keulemans is a multidisciplinary designer, artist and researcher. In his studio practise he produces critical objects informed by history, philosophy and experimental methodology. Major themes are repair, generative processes, and the environmental impacts of production and consumption … He is interested in traditional Japanese culture and aesthetics in relevance to contemporary socio-environmental ecologies, and the relationships between aesthetics and sustainability in regard to hylomorphic thinking in product design".
"about," guykeulemans.com, accessed 18 February 2017, http://guykeulemans.com/about.
In OT Keulemans is credited as "Project Designer, Research Investigator, Curator and Repairer".
"Object Therapy," https://australiandesigncentre.com, last accessed 15 August 2018, https://australiandesigncentre.com/object-therapy/.

[213] Andy marks is a Positive Change Agent, Impact Designer, Social Entrepreneur and Sustainability Expert. His profile reads: "I lead and advise purpose driven organisations including Australian Broadcasting Corporation, ACT Government, Hotel Hotel, Oz Harvest, Purpose, Responsible Cafes and Westpac Foundation".
"Andy Marks," linkedin.com, accessed 12 May 2018, https://www.linkedin.com/in/andy-marks-960a2b21.
In OT Marks is credited as "Project Designer, Research Investigator and Curator."
"Object Therapy," https://australiandesigncentre.com, last accessed 15 August 2018, https://australiandesigncentre.com/object-therapy/.

[214] Both Keulemans and Marks are Sydney-based. I was invited as a research partner being based in the Canberra area where the festival that hosted OT was held. Like Keulemans, I am also attached to a university (Keulemans works at the University of New South Wales and I work at the Australian National University). Our individual practices, however, are very different. Although Keulemans is also studio-based, there is distinction between his practice (product design) and SBCD as noted in previous chapters.

[215] The Fix and Make website explains: "Fix and Make is a series of workshops and talks by Hotel Hotel. Through the practical, the experimental and the philosophical, Hotel Hotel's program brings different people together to actively question our consumption of and relationship with objects. Collectively, with small acts of fixing and making we can get a better understanding of how things work".
"About," https://www.hotel-hotel.com.au, last accessed 12 May 2018, https://www.hotel-hotel.com.au/fixandmake/about/.

object and its providence, and attached an image. From the 70+ objects submitted, 31 were selected.[216] This spanned clothing, textiles, jewellery, furniture, electronics, ceramics, household goods and appliances, sentimental objects and a person who became known as “Peter the Person”.

The selected participants dropped off their broken object to Hotel Hotel, signed a consent form and were invited for an interview. This was video recorded and focused on a range of questions (Figure 8.1). The 28 participants—some submitted more than one object—were distributed to the researchers (Keulemans, Marks, Rubenis) for these interviews (Figure 8.2).

The video interview and object were then provided to a selected range of craftspeople, designers and artists (Figure 8.3). They were encouraged to watch the video and then respond to the repair of the object in any manner they chose. Once repaired, the owners of the object were then invited for a second video interview. Again, they were asked a series of questions. A statement provided by the creative practitioner about their intent for the repair was also read, and the object was unveiled.

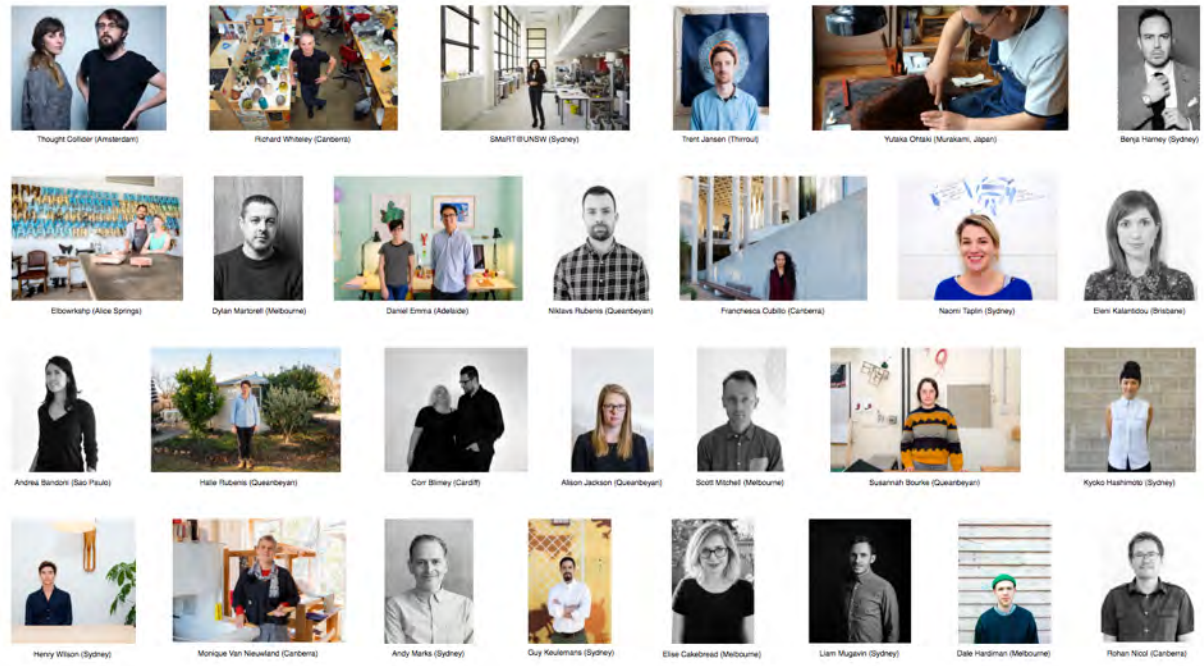
The objects were then showcased in a public exhibition, initially in Canberra. In 2017 OT was a recipient of a Visions of Australia Grant, managed by the Australian Design Centre, and is currently on a national tour to regional areas (2017-19).[217] At the end the touring cycle the objects are returned to their owners.

1ST INTERVIEW QUESTIONS	2ND INTERVIEW QUESTIONS
*How did you **acquire** this object?*	*Since we last saw you, did you **experience** any feelings or **concerns** about how object may be repaired? (Or from not being in possession of it?)*
*Do you know how **old** the object is?*	*What do you **think** of the repaired object now?*
*How did the object **break**?*	*How different is it from your **expectation**?*
*How did you **feel** about it when it broke?*	*How would you now **value** this object?*
*What made you **hold** onto the object?*	*Would you **sell** it, if you had the opportunity?*
*Does the object hold any **sentimental** attachment?*	*Do you think you could put a **cash** price on it?*
*Is the object linked to any specific part of your **life**?*	*Would you **repeat** the process (and if so, would you prefer it done differently in anyway?)*
*How do you feel about it being **repaired**?*	*Did participating in this **process** change the way you **think** about other **broken** objects you own or have owned? (Or change the way you think about products, consumption, **waste** or repair in general?)*
*Do you have any i**deas** as to how the object could be repaired?*	
*What are your thoughts on **consumer** culture?*	
*How do you feel about object obsolescence and **waste**?*	
*Is there anything else **you** would like to add?*	

8.1: Interview questions.

[216] Although 31 objects were selected, 29 made their way to the final exhibition. A participant decided to opt out of the process and two pieces of furniture were merged together to create one. There was also a Styrofoam box of broken ceramics that was submitted, which has been classed as a ‘single’ object.
[217] OT was the recipient of a *Visions of Australia Grant*, managed by the Australian Design Centre. Over 2017-19 the exhibition will travel to the Australian Design Centre; Noosa Regional Gallery; South Australian School of Art; Design Tasmania; Alcoa Mandurah Art Gallery; Manning Regional Art Gallery Taree; Lismore Regional Gallery; and Tamworth Regional Gallery.

8.2: Participants with their broken objects.
Images by Lee Grant (courtesy Guy Keulemans).



8.3: Selected repairers.
Images by Lee Grant (courtesy Guy Keulemans).

A quick note

Before continuing it is important to establish some parameters. Through the video interview process, OT generated a considerable amount of data and hours of video footage of interviews with members from the general public. This included a discussion of broken objects, but also a range of other topics and concerns. OT morphed into a social project about what it means to be human; the object merely served as the mechanism for this. An entire PhD could be written, or book for that fact, about the ethnographic research generated through OT. However, for my project here specifically, a discussion will arise in relation to the aims and motivations set out for this PhD.

8.4: Object Therapy exhibition opening.
Acknowledgement of country: Franchesca Cubillo.
Opening speech: Professor Stuart Walker.

Precedents

There are many precedents to OT. Proven scalable concepts such Repair Cafés,[218] Fixit Clinics,[219] Fixers Collectives,[220] along with a plethora of grassroots initiatives, and online platforms such as ifixit.com,[221] are appropriate examples of linking communities together with a common goal of repairing broken objects as the means to slow down waste. Many of these platforms are purely pragmatic endeavours to get stuff back into service and rely on a local community to perform repairs. Or these initiatives provide assistance or educational services for owners of broken objects to perform the repair themselves. This is bigger than just fixing something; it builds community, enables social interaction, facilitates sharing of skills and knowledge, further questions consumption patterns and the relationship that we have with objects, and keeps stuff out of landfill.

What OT exercises is a slight variation: design attempting to fix other design facilitated by design. The project is also akin to more standard modes of SBCD practice in that it is a service to a 'client' (the person with the broken object).

Social capital and 'publics'

OT leveraged social capital in that no money was exchanged between the participants or repairers. Extending many of the sentiments already raised by Gilding in Chapter 1, Graham Harris makes the point that in our current interconnected and increasingly complex world, trust, relationships, social

[218] Martine Postma initiated the first Repair Café in 2009 in Amsterdam. There are now over 1400 worldwide. They follow established guidelines set up by the original Repair Café. There are many of these cafes now in Australia.
"About Repair Café," https://repaircafe.org, last accessed 15 August 2018, https://repaircafe.org/en/about/.
[219] Fixit Clinics originated in the United States. Although focused on sharing skills through the fixing of broken stuff, there is also a focus on "critical thinking" and discussion around relationships with sustainability and consumption patterns.
"About Us-Contact," https://fixitclinic.blogspot.com.au, last accessed 15 August 2018, https://fixitclinic.blogspot.com.au/p/bring-your-broken-non-functioning.html.
[220] Fixers Collectives hail from the United States.
"About," http://www.fixerscollective.org, last accessed 15 August 2018, http://www.fixerscollective.org/about/.
[221] ifixit.com is an extensive online open source platform where anyone can contribute manuals and instructions to fixing broken stuff. ifixit also sells tools, spare parts, etc to perform the repairs.
"About iFixit," https://www.ifixit.com, last accessed 15 August 2018, https://www.ifixit.com/Info.

capital and collaboration are key drivers toward sustaining outcomes.[222] In his book *Seeking Sustainability in an Age of Complexity*, he writes:

> So if we are to tackle some of the really wicked problems, particularly those at the individual and community levels, then we will need to build capacity and social capital at the individual and community levels, taking regional factors and accidents of geography, history and climate into account. It is important to reiterate that wealth is an important driver of sustainability…[223]

Harris' sentiments make connections to academic Carl DiSalvo's notions of constructing "publics", a theory that builds on Dewey's 1927 *The Public and Its Problems*. DiSalvo suggests a public can be built by bringing people together via a common concern or issue. In the case of OT, this manifests through the linking of one community—those with objects in need of repair—with another community, that of creative practitioners as means to perform those repairs. DiSalvo states, however, that it is not a common concern that actually brings publics together. Rather, it is through others effectively communicating those issues or concerns and, as DiSalvo says, " …a place where design contributions occur".[224]

Further parallels can be drawn to Morelli's earlier sentiments around design as a social construct. Both Morelli and DiSalvo raise the point that design practice has the capacity to facilitate a community in respect to a common set of values or social concerns. For OT, as for the micro example of the *Ottomans* from *Crafting Waste*, this is through the obvious concerns of escalating waste.

Through the 'constructing of a public' a criticality can manifest that challenges assumptions of what and how things could or should be. This can also test the role of the designer and the limits of practice. Dunne and Raby have stated: "Developing a critical perspective in design is made difficult by the fact that the design profession … see the social value of their work as inextricably linked to the marketplace".[225] OT highlights another approach to practice and an alternative to standard SBCD. The community is viewed as the 'client', not just an individual, and practice is not used exclusively to gain a return from the work. The focus also becomes less about the object in itself but rather what objects mean and how they exist within a broader ecology; that is, the object's story and emotional residue. Working with or on an existing 'thing', and one that is not only broken but also loaded with someone else's meaning, challenges the abilities and responsibilities of creative practice.

Of course, we cannot always be doing things for free, however OT was not driven by the market place for financial return. Instead the project acted as the conduit for bringing people together. In stating that, the elephant in the room has to be acknowledged: Being plugged into a festival attached to a designer hotel has obvious overtones of a corporation enlisting creative practice for their own economic return (Figure 8.4).

Some stats about the submitted objects

Through the initial submission and interview process perhaps what was not surprising about OT, given what has been discussed in earlier chapters around emotional drivers, was that the majority of items submitted were of sentimental value. Although this is only a narrow study (Figure 8.5), 19 objects held some form of sentimental attachment, 2 contained historic or cultural value, 5 had functional value, and 1 object had no attachment whatsoever (it was an object accidently broken by

[222] Graham Harris, *Seeking Sustainability in an Age of Complexity* (Cambridge: Cambridge University Press, 2007), 4.
[223] ibid, 281.
[224] Carl DiSalvo, "Design and the Construction of Publics," *Design Issues* Volume 25, Number 1 (Winter 2009): 51.
[225] Anthony Dunne and Fiona Raby, "Designer as Author," in *DESIGN ACT: Socially and politically engaged design today—critical roles and emerging tactics,* ed. Magnus Ericson and Ramia Maze (Berlin: Sternberg Press, 2011), 29.

a child in a shop, which the parent was then forced to buy).[226] Each object did have a significant story attached (Figure 8.6) and 88% of the participants felt strong emotions when the object broke or was in such a state that required repair (Figure 8.7). These emotions cannot be pigeonholed but did range from guilt to sadness to feelings of responsibility.

OBJECT: 'VALUE'

Sentimental	O O O O O O O O O O O O O O O O O O O
Functional	O O O O O
Historic/cultural	O O
None	O
Negated	O O

8.5: Object 'value' statistics

OBJECT: HAS A STORY

Yes	100%
No	0%

8.6: Object story, percentages

OBJECT: FEELINGS WHEN BROKEN

Yes	88%
No	12%

8.7: Object feelings, percentages

OBJECT: AGE (years)

0 – 5	O O
5 – 10	O
10 – 20	O O O O
20 – 30	O O O O
30 – 40	O O O O O O O O
40 – 50	O
50 – 100	O O O O O
100 +	O
Unknown	O

8.8: Object age (years) statistics

[226] Two objects have been omitted from this; "Peter the Person", as performing a repair on a human being is not appropriate, and Oscar's ruler. Oscar is the son of one of the researchers and therefore ethically not appropriate in this context.

The age of objects varied (Figure 8.8), however the majority of them sat in the 30-40 year bracket. The second highest was the 50-100 year bracket. 11 objects were recorded as less than 30 years old and only 3 objects were documented as less than 10 years. This could suggest several things: a) because of the current attitudes toward consumer culture, stuff is simply being thrown away; b) current stuff does not hold the same perceived 'value' as older stuff being seen as cheaper, hence being discarded; or c) things that are less than 10 years old are still in service which would defy the statistics around the recent proliferation of stuff. Those older items might be better constructed, having been made in a time when skills and manual labour was the norm. Although not a question that was prompted in the interviews, 35% of participants did bring up concerns around the progressive loss of practical skills in making and repair (Figure 8.9).

PARTICIPANT: ATTITUDES TOWARD SKILLS
***not a prompted question**

Actively mentioned	35%
Not mentioned	65%

8.9: Participant attitudes toward skills, percentages.

PARTICIPANT: NEGATIVE ATTITUDES TOWARD CONSUMER CULTURE

Yes	70%
No	23%
Not bothered	7%

8.10: Participant attitudes toward conumer culture, percentages.

PARTICIPANT: REUSE/REPAIR PRACTICES
***not a prompted question**

Mentioned	58%
Not mentioned	42%

8.11: Participant engaged in reuse/repair practices, percetages.

This brings up further attitudes towards consumer culture. 70% of the participants had strong negative opinions toward consumer culture and rapid consumption patterns, 23% made no comment and 7% were not bothered (Figure 8.10). This reiterates the bringing together of a community through a common harm; more than half of the participants were actively involved in some form of reuse or repair practices outside of the project (Figure 8.11). These included op-shops or grassroots local sharing networks. Further, although the participants were critical of current consumer culture, 23% of the participants suggested that the responsibility for waste is shared between the manufacturer and the consumer (Figure 8.12). This suggests that there is also a responsibility from the consumer to make informed choices about the things they use. If there are enough such publics being constructed then incremental change can happen. This, of course, does exclude those that do not have a choice nor have the economic means to make choices. And with the 7% of the above, not everyone is driven to change their attitudes or consumption patterns.

OBJECT: WHOSE RESPONSIBILITY?

Manufacturer (M)	O	O	O	O	O							
Consumer (C)												
M and C	O	O	O	O	O	O						
Impartial	O	O	O									
No comment	O	O	O	O	O	O	O	O	O	O	O	O

8.12: Object responsibility statistics.

Direct relationships

One key aspect of SBCD is having a direct relationship with a client. This is typical of many design fields where one of the main responsibilities of the designer is to extrapolate requirements from stakeholders, organise often-competing ideas, and transpose them into some type of physical manifestation. This is an important human element, particularly of SBCD, as it offers a direct emotional relationship with an object and with the person who has commissioned it. To make a comparison, SBCD differs vastly from its cousin of industrial design. Being a profession that services an industry and the mass-manufacture of goods, industrial design does not have the same direct one-to-one relationship with the user.

Four Side Tables, which had a direct relationship with a specific client and therefore set of ideas and notions, as already discussed, is a prime example of how the story of an object is equally if not more important than the object itself. This is an important aspect of OT. As highlighted by the statistics, the majority of the objects submitted had emotional content attached and all had a subsequent story. Given the loaded nature of many of the objects, access to the initial video interview became one of the key components of the project.

Authorship

Given there are around 28 objects that were repaired for OT, I will not be discussing each object individually. Rather, I will discuss two repairs chosen as examples that take different approaches. These repaired objects yield interesting results. The examples are a 1970s vintage kimono that was transformed into an experiential object (Figures 8.13 and 8.14), and a 40-plus-year-old steel washing trolley reconfigured into steel clothes pegs (Figures 8.15 and 8.16). The former exercises a quiet approach. The latter represents more of a conceptual vision, but not necessarily an explicit response to what the participant discussed in the interview.

A key aspect that arises from dealing with waste, and repair, is challenging the notion of authorship. In other words, who owns what? This pushes lingering Modernist ideals to the limit, especially a designer's capacity, skills and sensitivity in responding to an existing object that has not initially manifested from their own creative vision. Inevitably this highlights limits to practice such as how an authoritative creative voice can overshadow what is actually required.

Fi's vintage kimono

Fi's vintage kimono (Figure 8.13), which once belonged to her now deceased mother, was repaired by the fashion duo Corr Blimey (Figure 8.14). This work extends and epitomises some of the themes addressed in *Crafting Waste* by highlighting how a designer's light touch—a micro intervention—can radically transform objects. In this case the object has not been discarded as it holds considerable sentimental value, but it is nonetheless non-functional and in need of repair.

8.13: Fi's vintage kimono.
Image by Lee Grant (courtesy Guy Keulemans).

8.14: Repaired by Corr Blimey.
Image by Lee Grant (courtesy Guy Keulemans).

In their statement about the repair, Corr Blimey commented how touched they were with Fi's attachment to the object and how this drove their process. Fi had expressed how saddened she was that the kimono had become forlorn and in such a state of repair. The transformation exercised by Corr Blimey is sensitive and performed with a light touch; the tears in the Kimono were fixed but the garment, as a whole, was not altered in any way so as to return to an item of clothing. Nor was it cut or machine sewn. The gown was delicately arranged back in on itself to create an experiential object held in place in a way that could be easily reversed.

Corr Blimey's re-interpretation is done with such sensitivity and care; they respond to the story of the object's owner; to the embodied memories of the garment; to its existing function as an item of clothing by not altering it in any way; and through a deep respect of the materiality. Very little energy is also expended in radically transforming the object.

Corr Blimey's main practice focus is on the experience of the end user.[227] This shines through in their transformation; the honouring of the object's previous life and response to Fi's story. It is also an approach that is scalable as it a) requires minimal tooling (hand stitching); b) potentially acts as a blueprint transferable to alternative ways of dealing with forlorn and loved textiles; and c) shows how stuff can be transformed into other experiential objects through minimal intervention. The notions of design-reversibility are evident in this repair and a thoughtful assemblage of the material in a recognisable but re-contextualised way.

[227] "Corr Blimey," http://corrblimeyfashion.com, last accessed 18 August 2018, http://corrblimeyfashion.com/about/.

Teena's washing trolley

In contrast, the repair of Teena's washing trolley is far more transformative (Figure 8.15). Designer Trent Jansen radically changes Teena's trolley into a series of clothes pegs (Figure 8.16). The process to perform the transformation requires cutting the steel trolley into small segments and then machining into appropriate shapes using specialised industrial tooling.[228] Where Corr Blimey's transformation is an additive process requiring little intervention—that is, thread was added and hand sewn to repair holes and to re-contextualise the object—Jansen's process is more laborious, intensive and subtractive as material is removed in every step.

During the original interview, Teena expressed that the trolley has an aesthetic quality of "speed" that she loves. With the trolley being some forty years old as well, the object has had a long history; although missing two wheels, rusted and no longer working, it sits in her backyard as a reminder of past service. The object is also loaded with emotion and memories of her grandson pushing it around the garden and how, as a child herself, washing trolleys played a role in domestic life. Teena makes the comment that washing trolleys "…are part and parcel of my fabric".[229]

Conceptually, Jansen describes the work as countering a past era and how there has been a shift from the 'Great Australian dream', which was once the owning a house on a quarter acre block. This is a reference to how social and cultural values change and evolve over time and fits within his own practice and research interests; Jansen describes himself as a "design anthropologist".[230]

8.15: Teena's washing trolley.
Image by Lee Grant (courtesy Guy Keulemans).

8.16: Repaired by Trent Jansen.
Image by Lee Grant (courtesy Guy Keulemans).

[228] Trent Jansen. 2016. "Teena's #WashingTrolley." Instagram photos, 11-22 August 2016. https://www.instagram.com/p/BI9nSL3j6x7/?hl=en&taken-by=trentjansenstudio.
[229] The interviews can be seen here: https://vimeo.com/channels/objecttherapy.
Additional information can be found on the Fix and Make website (https://www.hotel-hotel.com.au/fixandmake/events/object-therapy/) or on the Australian Design Centre's website (https://australiandesigncentre.com/object-therapy/).
[230] Jansen's website states: "Trent has developed a unique style of design, known in his studio as Design Anthropology. This method was devised to move design beyond the stark pragmatism of Modernism and its incongruence with the beautiful imperfection of humanity. Instead Design Anthropology focuses on … studying the history and culture of human societies and taking design inspiration from the rich stories that punctuate human heritage".
"Trent Jansen Studio," trentjansen.com, last accessed 12 February 2018, http://trentjansen.com/studio/.

Jansen's repair illustrates an alternative approach to Corr Blimey's and the differing motivations that drive a practice. With the surface rust that is forming on the steel surface the pegs may function well as artefacts of a bygone era. However, the question for this repair is *what then becomes of them?* Could they be transformed again, like Corr Blimey's approach, or is this the end for the pegs? From a practical perspective they will never be used as functioning pegs as the rusted steel may well leave some unfortunate marks on a pair of freshly bleached y-fronts, but perhaps this is not the point.

Although transformations that stem from different motivations, both Corr Blimey and Jansen's repairs were met with positive reactions. Fi's was an overwhelming sense of emotion and an automatic hugging of the object. Teena's response was one of bewilderment as she initially tried to make the connection between the original trolley and how it then had been manipulated into much smaller pegs. Corr Blimey's approach shows how a practitioner is willing to shelve their own agenda to afford someone else's story, but perhaps the value in Jansen's work is that it proves that anything can be radically transformed well beyond its original form or function.

My own contribution

I also repaired work for the project, aside from acting as a co-researcher and co-curator. The items assigned were two furniture pieces designed by notable Modernist designer Fred Ward. The Heritage Officer from the Australian National University (ANU) submitted these objects (Figures 8.17 and 8.18, Appendix 5). This repair sits as an example between Corr Blimey and Jansen's repair in that one object—the chair—is still completely recognisable having not been altered; whereas the single bed head has been completely reconfigured.

Fred Ward (1900-1990) was hailed as a pioneer of Australian furniture design. The two pieces submitted to OT were originally designed for the ANU's University House in the 1950s and represent a cross-section of Ward's work. Produced by the same designer they adopt different aesthetics: the bed head (for a student's single bed) is a production item and the chair is limited edition.

To diverge slightly and propose a fitting analogy for this overall PhD: two other famous Modernist designers, the international Hans J. Wegner from Denmark, and Ward's contemporary the Australian Grant Featherstone, both could not see past chairs. Wegner once commented that, "If only you could design just one good chair in your life … but you simply cannot".[231] Featherstone is documented to have said, "All design involves relationships between man and things. Nowhere is this relationship more significant than expressed in chairs…"[232] The purpose of stating this here is to illustrate the difference in thinking, and the fixation or limiting factors that can occur when adhering to past concerns; design requires constant adaptation to a changing world.

Like Featherstone and Wegner, Ward had a similar affair with chairs. However, Ward tried to adopt a broader philosophy and as noted by his colleague Derek Wrigley, "His vision of design, however, was to look beyond designed objects to a wider social context of what could be better for society".[233] I'm not sure how this played out for Ward considering that many of the pieces he designed are now redundant or broken and reside in storage facilities across the ANU. However, at least it has been documented that his thinking was expanded beyond just the mechanics of a chair.[234]

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[231] "Wegner: Just One Good Chair – 31 January 2014," designmuseum.dk, accessed 28 July 2014, http://designmuseum.dk/en/presse/presserum/2014.

[232] Terence Lane, *Featherstone Chairs* (Melbourne: National Gallery of Victoria, 1988), 9.

[233] Derek F. Wrigley, *Fred Ward: Australian Pioneer Designer 1900-1990* (Canberra: Derek F. Wrigley, 2013), 81.

[234] Fred Ward was the head of the ANU Design Unit during the 1950s and 60s, a specialist one-of-a-kind integrated in-house unit that provided furniture, and architecture, graphic and landscape design for the Australian National University. Wrigley refers to the work produced by the unit as "total design".
Wrigley, *Fred Ward: Australian Pioneer Designer 1900-1990*, 121-134.

I repaired the chair and made it whole again (Figure 8.19). One thought that crossed my mind was to make a statement by destroying both pieces of furniture; host a ceremonial fire, video document it and then present the ashes in an urn—'Fred is dead, time to move on'. This is significantly egotistical and also makes for a false sense of inflated self to think that the work I have done, or will do, can be compared to Ward. This also highlights how designers can still adopt an overarching authoritative approach regardless of costs. An alternative approach is to use the materials or existing objects as opportunities for collaboration—I simply used one to fix the other. And yes, we do not need more chairs in the world…

8.17: Amy's Fred Ward furniture (bedhead).
Image by Lee Grant (courtesy Guy Keulemans).

8.18: Amy's Fred Ward furniture (chair).
Image by Lee Grant (courtesy Guy Keulemans).

The bedhead was knocked apart, sliced and then put back together again. All parts of the bed head was used in the repair so the randomness of the legs was due to the lengths of material. The slicing of the bed head also exposes how the furniture was originally made, which takes on its own aesthetic and points to the material having had a previous life.

Working on a piece that has status attached further challenges to the notion of authorship and designer as 'star'. There is a correlation here in respect to dealing with waste. Someone else's stuff which becomes someone else's problem means shelving a lingering mentality and to look more directly at what is required. If design can do this then it has the capacity to make an impact. Or at the very least respond to issues of waste by developing strategies for viable creative practice that help in mitigating threats from discarded or undervalued materials and resources.

IN SUMMARY: A FEW POINTS ON REFLECTION

To link back to Harris' earlier account of generating social capital, OT was a collaborative project involving many stakeholders. However, for the project to function it required the networks of those collaborators to facilitate the bringing together a community of repairers. There are several points to raise here.

Community of appropriate creative practitioners

All collaborators firstly require a community of creative practitioners to call from, but also an open-mindedness to engage appropriate makers based on their skills and capacity to contribute. Waste is an issue that requires a range of approaches, not necessarily those from a select group who have standing in design media.

Equal exchange

The project required willingness from the repairers knowing there is no monetary exchange. This is difficult considering the aforementioned state of decline for SBCD combined with what Harris has stated in regards to generating wealth. What was obviously required then is some form of other exchange for involvement. Considering OT was part of Hotel Hotel's *Fix and Make* cultural program—and to reiterate that Hotel Hotel is a member of the international consortium 'Design Hotels'—there was an informal promise from Hotel Hotel's marketing department to promote those repairers involved. This did not work as it was linked to the above point around a designer's standing in the media; those with bigger names were plugged in marketing collateral, not necessarily those that had achieved the most sensitive or scalable repair outcomes.

Localised action

There is a need to address repair as a local practice to link a community of participants and repairers. It has been recognised that although the use of international and interstate designers has degrees of merit, waste is a local problem and as such should be trialled within a local setting using exclusively local participants and repairers.[235]

Wealth

The difference between OT and the repair platforms such as Repair Cafes is that the latter are open to an entire community, facilitated by a community. A platform for OT being associated with a design hotel, and further housed in a complex owned by a developer, leverages off a certain clientele. As Harris has suggested, sustainability is linked with wealth. This may well be the case and twofold: those with disposable incomes drive un-sustainable practices and it is those with money that can also drive change.

Inconsistencies in data

There are inconsistencies around interviewers questions. Although it was agreed that the interview style was to be semi-formal, and that there was set questions to cover, some interviewers allowed participants to freely talk, others led the participants adding additional information or personal anecdotes. This makes for an open conversation but for research purposes it requires a systematic approach in generating data.

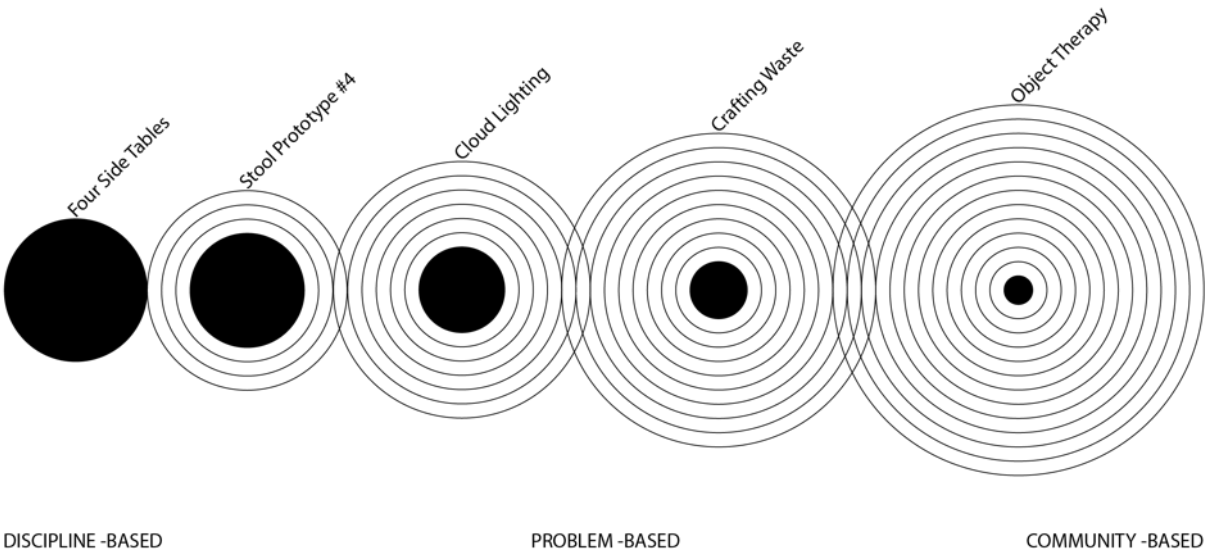
Final summary

In summary, OT was not exclusively about the objects. It is a project that shows what alternative roles design can play in respect to facilitating community-based outcomes. The public being integral to the project exercises agency and highlights the role that creative practice can play in addressing issues of mass consumption patterns and resulting waste. OT also shows that there is a band of the community with 'stuff' they do not know what to do with. This is an opportunity for SBCD.

[235] The research collaboration has continued with Guy Keulemans (UNSW) under a different guise, *Transformative Repair Perception Research*. This project follows a similar format to OT and in collaboration with each regional touring venue a similar format is being trialled, however with a focus on local participants and repairers. Information regarding this project can be accessed here: http://transformativerepair.net/.

8.19: Amy's Fred Ward Furniture repaired by Niklavs Rubenis.

PART 3: DISCUSSION

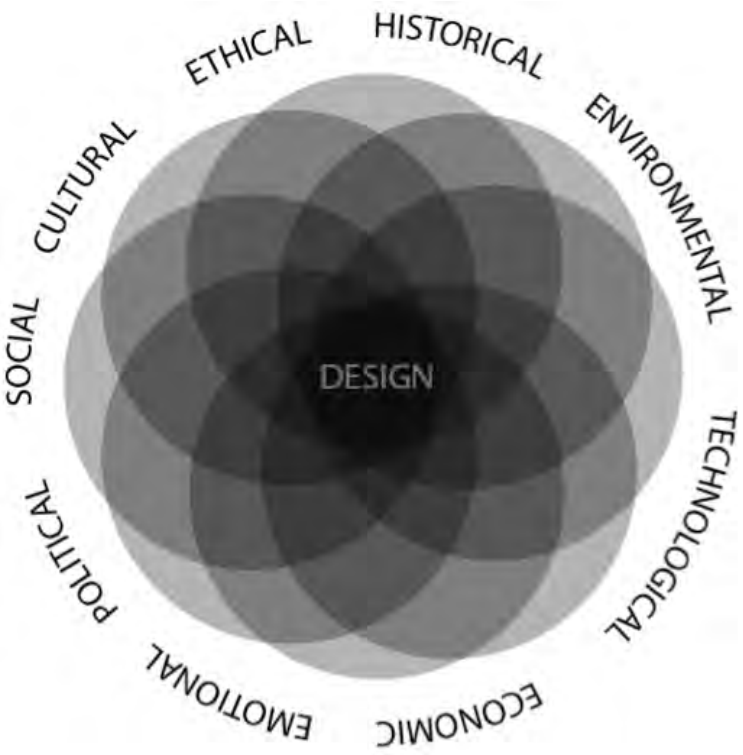


9.1: How the practice is changing.

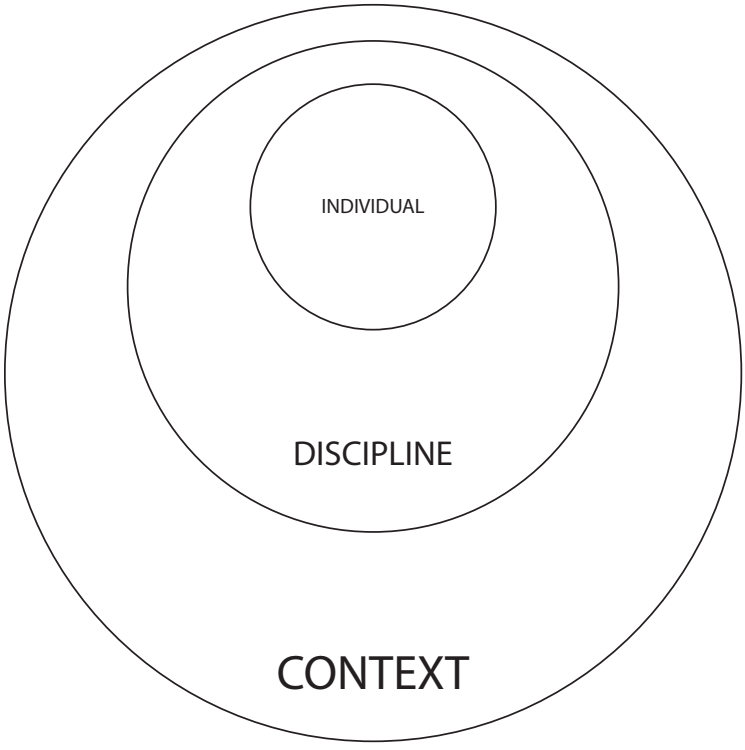
DISCUSSION

This project has mapped a radical shift in approaching an individual's practice (Figure 9.1). Each body of work discussed has informed the next and significant leaps have been made. What this project has shown is that a shift from narrow discipline-based focus to a broader problem-based perspective gives SBCD relevancy and critical agency to make meaningful contributions to material culture and by extension the built environment. Changing direction and re-conditioning thinking from lingering or existing ideals that have informed standard practice, such as a focus exclusively on an object's form and function, is a difficult task. It challenges preconceived ideas about what things are and how they should look. However, this is important given myriad crises that currently exist in the world and how design practice is implicated in this. Business obviously cannot continue as usual and design has a significant role to play in shaping alternative futures; but it needs to change. Shifting a practice requires situating within a broader ecology that encompasses many interconnected, complex and often-competing components (Figures 9.2 and 9.3).

Exploring a practice beyond just the making of another thing requires a redesign of design. Again, this is a challenge but shifting focus to dealing with the here and now and adapting to change by addressing significant problems, such as concerns of waste, provides far more opportunity for impact and engagement. Adhering to past practices narrows scope and closes down alternatives. While focused to some extent on 'furniture', this project has become less and less about furniture; furniture merely serves as the mechanism for distilling and discussing broader and emergent problem sets and themes. The question of "why make more stuff" in part can be answered, but it is complex and requires reconciling with practice. As such, the following main points arise for discussion (Figure 9.4).



9.2: Design complexity.



9.3: Circles of significance.

	"NEW" / ALTERNATIVE PRACTICE	OLD PRACTICE
INDIVIDUAL	Re-learning age-old skills of re-use, repair and care (survival)	Concern with the new as central to design
INDIVIDUAL	Breaking down authorship (letting go of ego)	Design only as an individualistic pursuit where materials are seen as expendable
INDIVIDUAL	Guided only by what is on hand and collaborating with materials (process)	Design first and manipulate materials with preconceived stylistic idea to suit, whatever the ramifications; or to follow trends
INDIVIDUAL	Placing craft skills into a broader context (construction of the built environment)	Craft skills only related to medium or discipline specifics
DISCIPLINE	Un-thinking design (design shapes the world)	Design as an exclusively aesthetic pursuit; form follows function
DISCIPLINE	Recognise design to be both part problem and part solution (cause and effect)	Continue to contribute to the ebb and flow of stuff without a clear objective as to why
CONTEXT	Global problems, local action (waste)	Inward looking
CONTEXT	Adapting practices to be responsive of critical issues (problem-based practice)	Concern with rote discipline specifics

9.4: Old vs "New" practice.

INDIVIDUAL: PRACTICE AND AUTHORSHIP

Re-learning age-old skills of re-use, repair and care (survival)

Shifting from making to re-making through an engagement with reuse and repair practices has the capacity to slow down waste to landfill. Cultures throughout the world and across time have been practicing reuse and repair as a matter of survival due to scarcity of resources. In the West, the structures that support human existence are hidden from view which has resulted in a disconnection to where things have come from, where they end up and what impact this has. We are staring down a barrel of increasing waste and resulting scarcity of resources unless the entire system of production, consumption and disposal radically changes. Considering current economic structures rely on a constant turn over of product, this may never happen. To counter unsustainable practices SBCD has the capacity for reuse and repair due to training and expertise in visual art or design, an engagement with creative processes, honed and high-level technical skill and deep material knowledge. If anything can be designed then surely new systems can be designed. However, a pursuit that deals with what already exists—and one that further redefines the value of stuff that has been discarded—requires a letting go of ego.

Breaking down authorship (letting go of ego)

This research has made attempts to develop appropriate methodologies for studio practice to counter modes of unsustainability. Existing notions that revolve around design as an exclusive mechanism to produce 'new' things, or as an individualistic pursuit whereby materials are expendable—a sole authoritative voice—requires reversing. This translates to giving undervalued things an alternative life by performing micro interventions that still pay homage to an object's previous life. Waste as that example is 'alive' and to effectively make in roads to reducing unsustainable practices and objects requires a lighter touch and a letting go of ego with an aim of addressing universal issues. Ultimately this will blur the line between who owns what; the object is a condition of someone or something else. Yet to keep it in service still requires a creative touch that does not wholly destroy it's past nor working in a manner that hampers a future.

Guided only by what is on hand and collaborating with materials (process)
Designing first and then manipulating materials with a preconceived stylistic idea to suit, whatever the ramifications, or to follow trends, is default practice. Using only what is on hand or reversing how materials are seen as expendable shifts a mindset to that of waste as a potential asset. As this project has transformed, there has been a giving away to process and a shedding of preconceived ideas about what things should be, look like or how they should function. Process is to guide the work otherwise it reverts to default practice and continues to perpetuate unsustainable approaches.

Placing craft skills into a broader context (construction of the built environment)
Redirecting practice requires acknowledging that design (action) and craft (making) is responsible for authoring the construction, altering and interaction of the built environment. Our physical world is a construct derived from the capacity to make stuff. Material culture exists within this framework, as does the resulting waste that comes from production, consumption and disposal. Craft skills as exercised in SBCD have the capacity to contribute meaningfully to this and to counter issues of waste and unsustainability. However, this requires placing a practice into a broader ecology.

DESIGN DISCIPLINE: WHAT NEEDS TO CHANGE

Un-thinking design (design shapes the world)
Design is a powerful tool in how our physical existence on this planet is shaped. This acknowledgement, however, requires a decoupling from default ideals driven by notions such as "form follows function". An 'old' practice might only be driven by aesthetic, technical or material fixations. This fails to take into account that practice is both responsible for creation and resulting destruction. Therefore greater emphasis is to be placed on the 'why' and 'how' as opposed to 'can' and 'should'. There are clear ethical dimensions to this reality.

Recognise design to be both part problem and part solution (cause and effect)
Design has the capacity for cause and effect and to be a problem or a solution. Raising this as a conundrum for practice highlights the responsibilities and ethics of SBCD in a time when we are producing more stuff and more waste like never before. Understanding that design has broader consequences, and that it is further linked to waste, highlights the slew of problems that affects relationships to environmental, social, cultural, ethical, political and economic imperatives.

CONTEXT: THE WORLD VIEW

Global problems, local action (waste)
Waste is a local problem tied to global systems. Objects and the materiality of that stuff flowing through homes and urban environments often transcend geographical borders. This means that waste has simply become a problem for someone else, somewhere else. As this project shows, SBCD as a localised endeavour that encompasses many sustainable attributes has the capacity to disrupt this global flow of materiality on a local level. Waste is, and will continue to be, the reality of Western consumption patterns. But considering that waste is an issue of and for design—a direct result from design—designers can redirect practice and develop strategies toward the mitigation of waste. Here also lie opportunities for collaboration. In respect to reuse and repair, repair does not just involve pragmatics; it is also about communities by linking members of one community to another. Design is an act of social engagement that is beyond making more and more stuff.

Adapting practices to be responsive of critical issues (problem-based practice)
Design has an obligation to change as the world changes. If practice remains bound to past models or fixated on domestic disciplinary concerns, then it ropes itself off from the world. As a result it has the potential to render itself irrelevant. But SBCD is far from that; it just requires moving from discipline-

based (narrow) to problem-based (wide) practice that responds to emergent and critical concerns. SBCD is ultimately an agile practice that has important contributions to make to the world.

		Four Side Tables	*Stool Prototype #4*	*Cloud Installation*	*Crafting Waste*	*Object Therapy*
INDIVIDUAL	Re-learning age-old skills of re-use, repair and care (survival)	●	●	●	●	●
	Breaking down authorship (letting go of ego)			●	●	●
	Guided only by what is on hand and collaborating with materials (process)			●	●	●
	Placing craft skills into a broader context (construction of the built environment)		●	●	●	●
DISCIPLINE	Un-thinking design (design shapes the world)		●	●	●	●
	Recognise design to be both part problem and part solution (cause and effect)				●	●
CONTEXT	Global problems, local action (waste)		●	●	●	●
	Adapting practices to be responsive of critical issues (problem-based practice)				●	●

9.5: Practice checklist.

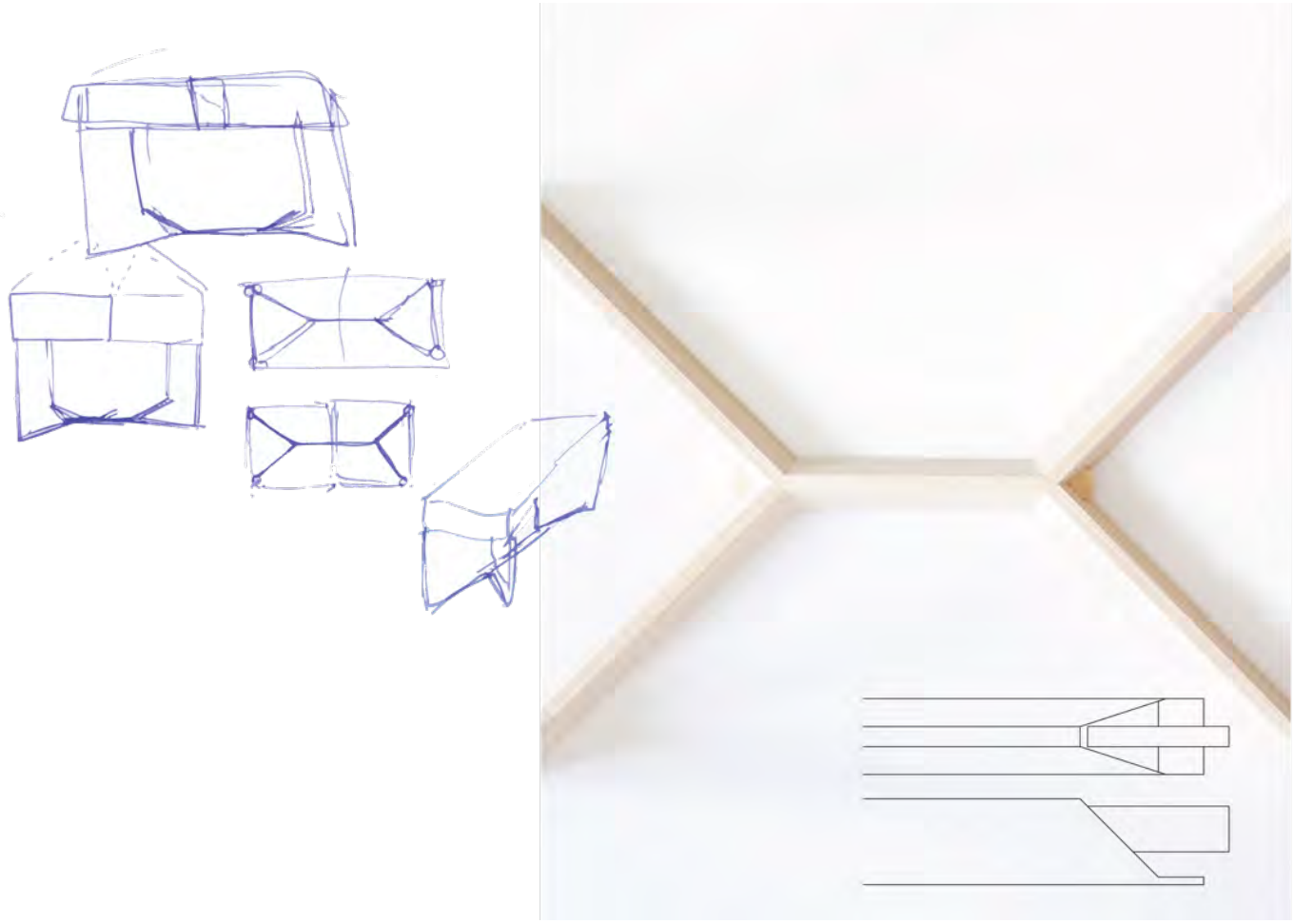
WHERE TO NEXT?

In no way is this project comprehensive. And there is no definitive conclusions other than these points raised that offer a reference for further discussion. My intention for this project was to develop an alternative mode of practice. This, in comparison to where I started, I believe, has been achieved (Figure 9.5). What I have attempted is to highlight *another* mode of working that shifts from making to re-making and further to thinking of how the work produced via the studio could include a local community as the 'client', and therefore have greater impact and an opportunity to discuss common issues that effect all of us. Whatever happens in the future of design, one thing, will always be certain: *Design is waste is design.*

APPENDIX

1. PROCESS: FOUR SIDE TABLES

A1.1: Four Side Tables (detail).
Image by Halie Rubenis.



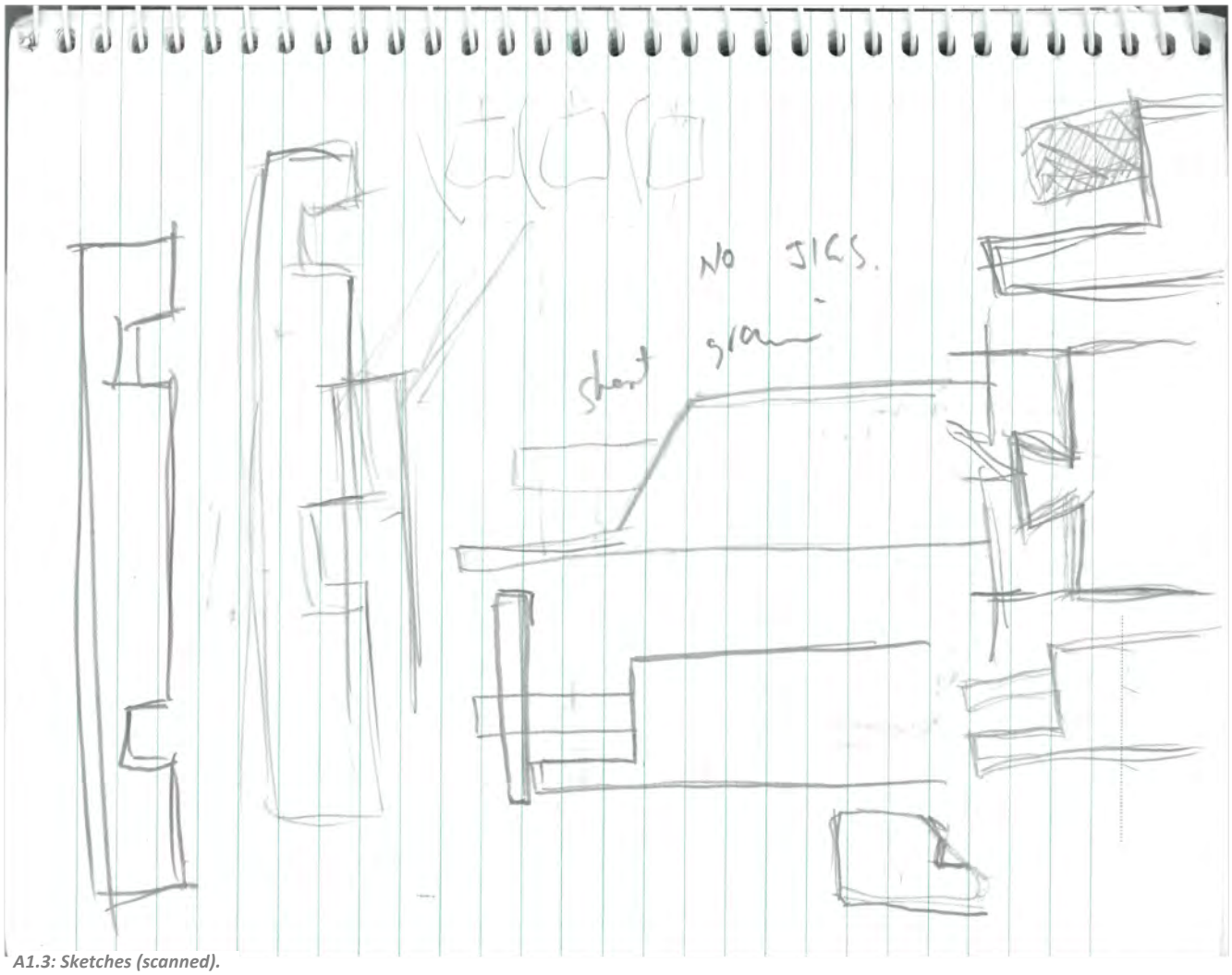
A1.2: Four Side Tables frame (detail).
Image by Halie Rubenis.

Project Overview
Four Side Tables was a commission from a local Canberra resident. An exotic coniferous Blue Spruce was felled in their front yard due to disease, leaving a considerable gap. Physically it had shaded the house, but it also held emotional and symbolic associations as the family's children had grown up playing in the tree. The clients did not anticipate such strong feelings of responsibility, guilt and nostalgia surrounding the tree's removal, and felt compelled to acknowledge this through commissioning its revival in another form.

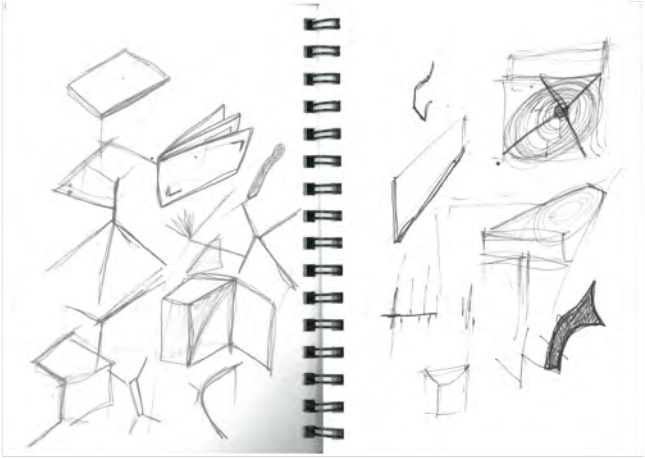
The brief was simple: to use the timber and transform it into some form of furniture. Other than those parameters, the project considerations were left open.

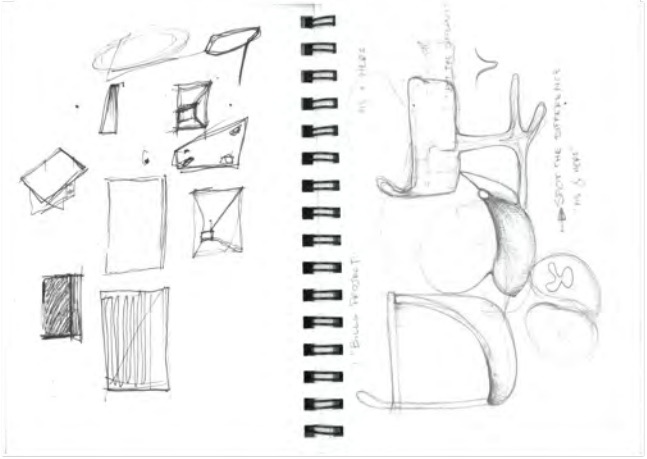
Details
Name: Four Side Tables.
Year: 2014.
Materials: Salvaged Blue Spruce (inside drawers), Silver Ash (frame and carcass).
Dimensions: 500 x 350 x 600 mm.

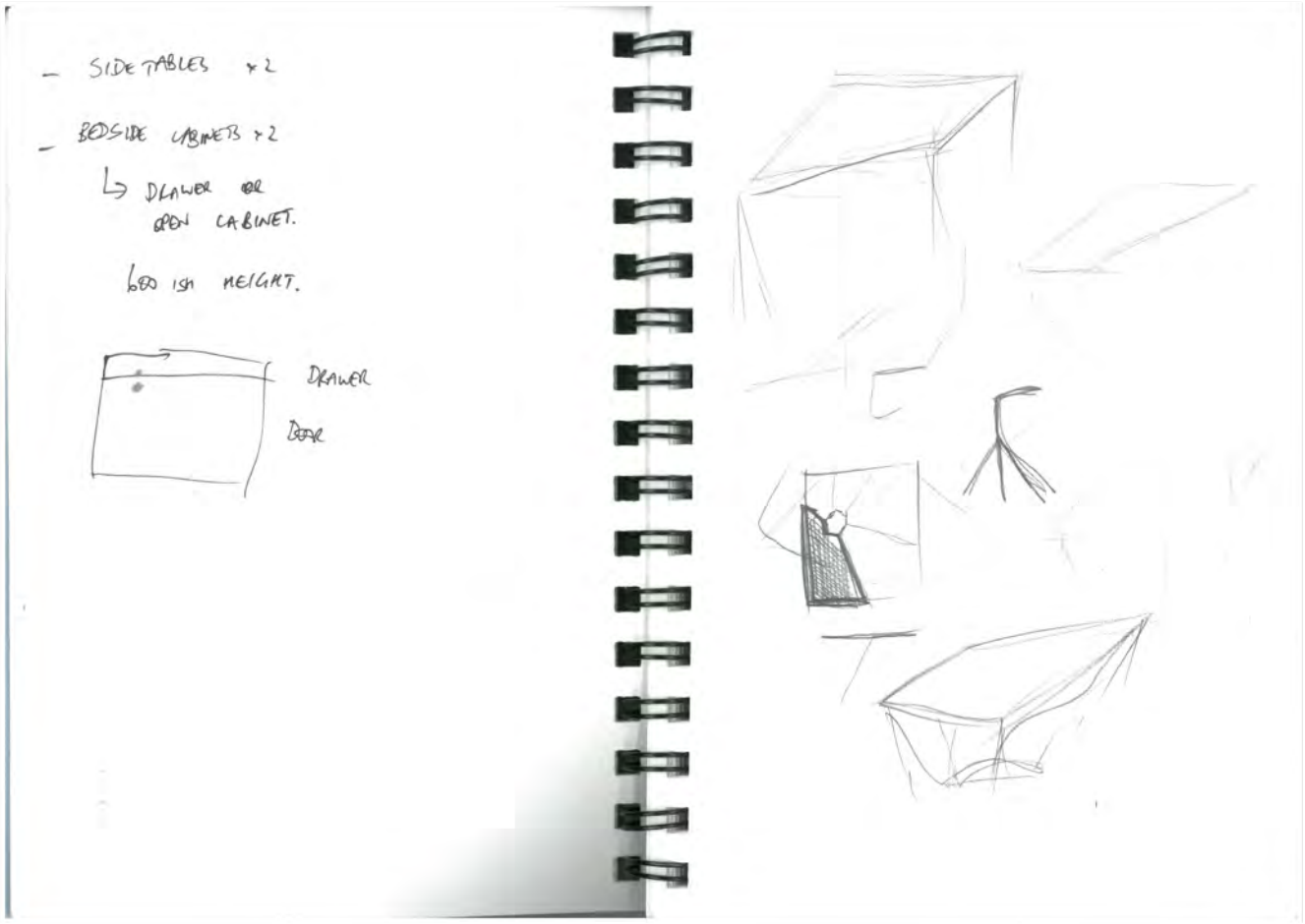
Exhibited as part of:
Made 3: Volume 1 (He Made She Made Gallery, Sydney NSW). June 2014.
Maker+Designer (Nishi Gallery, NewActon ACT, Canberra ACT). September 2014.
Citizens of Craft (Craft ACT: Craft and Design Centre, Canberra ACT). September - October 2016.

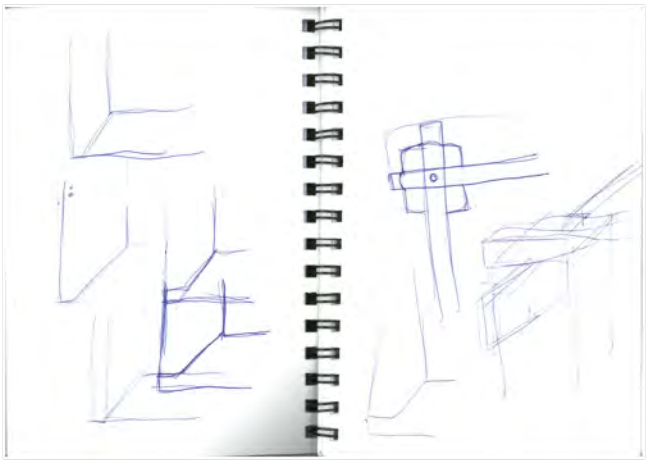


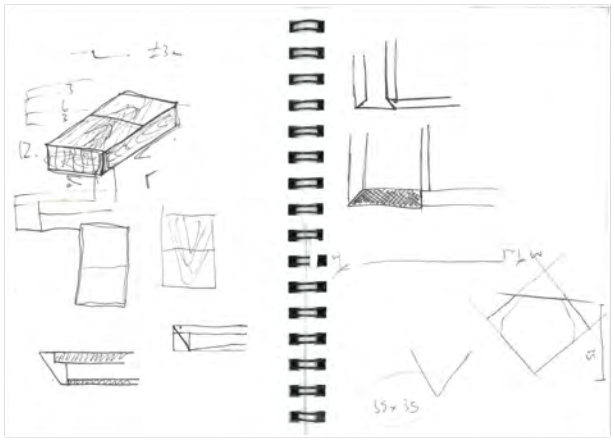
A1.3: Sketches (scanned).











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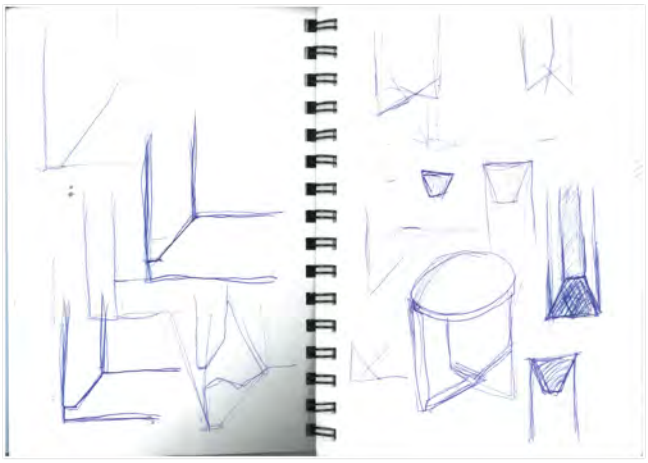
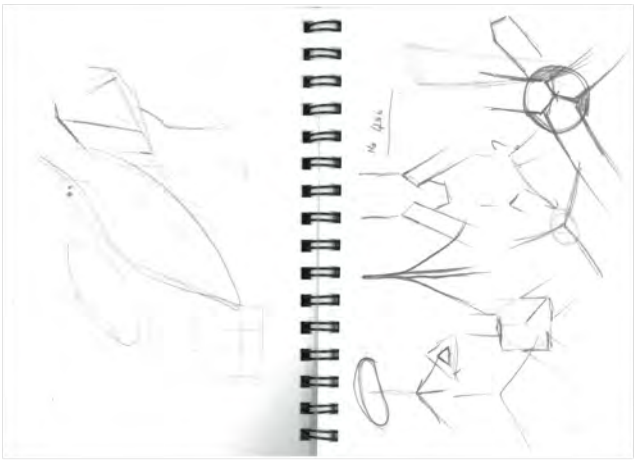
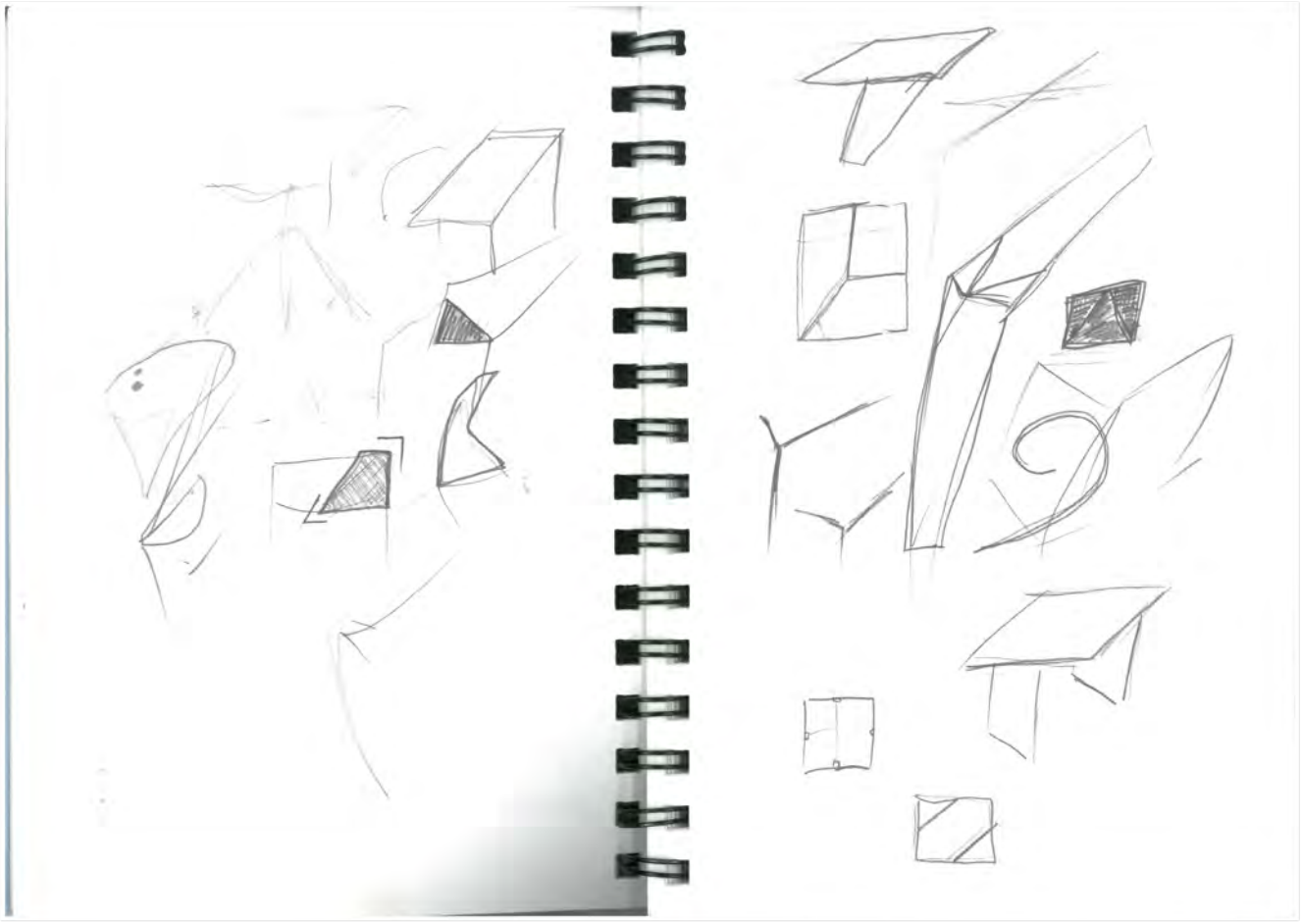
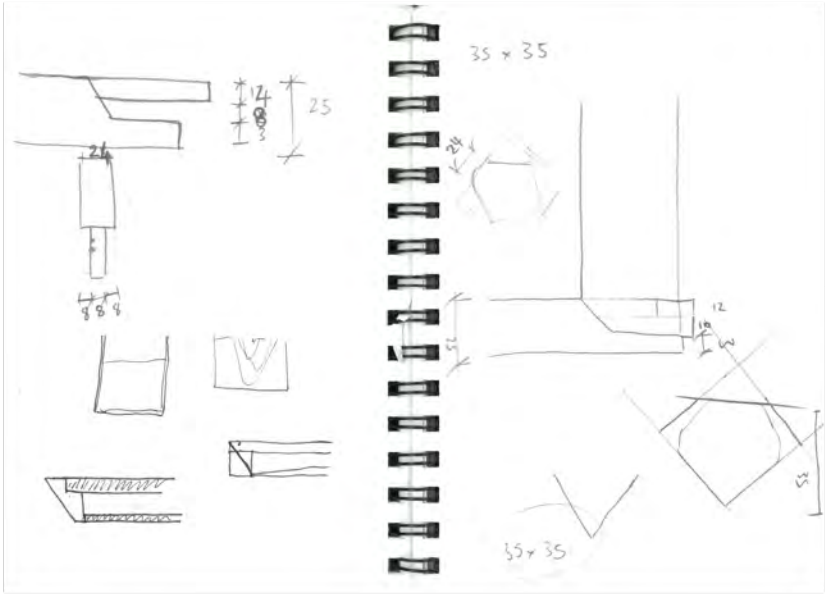
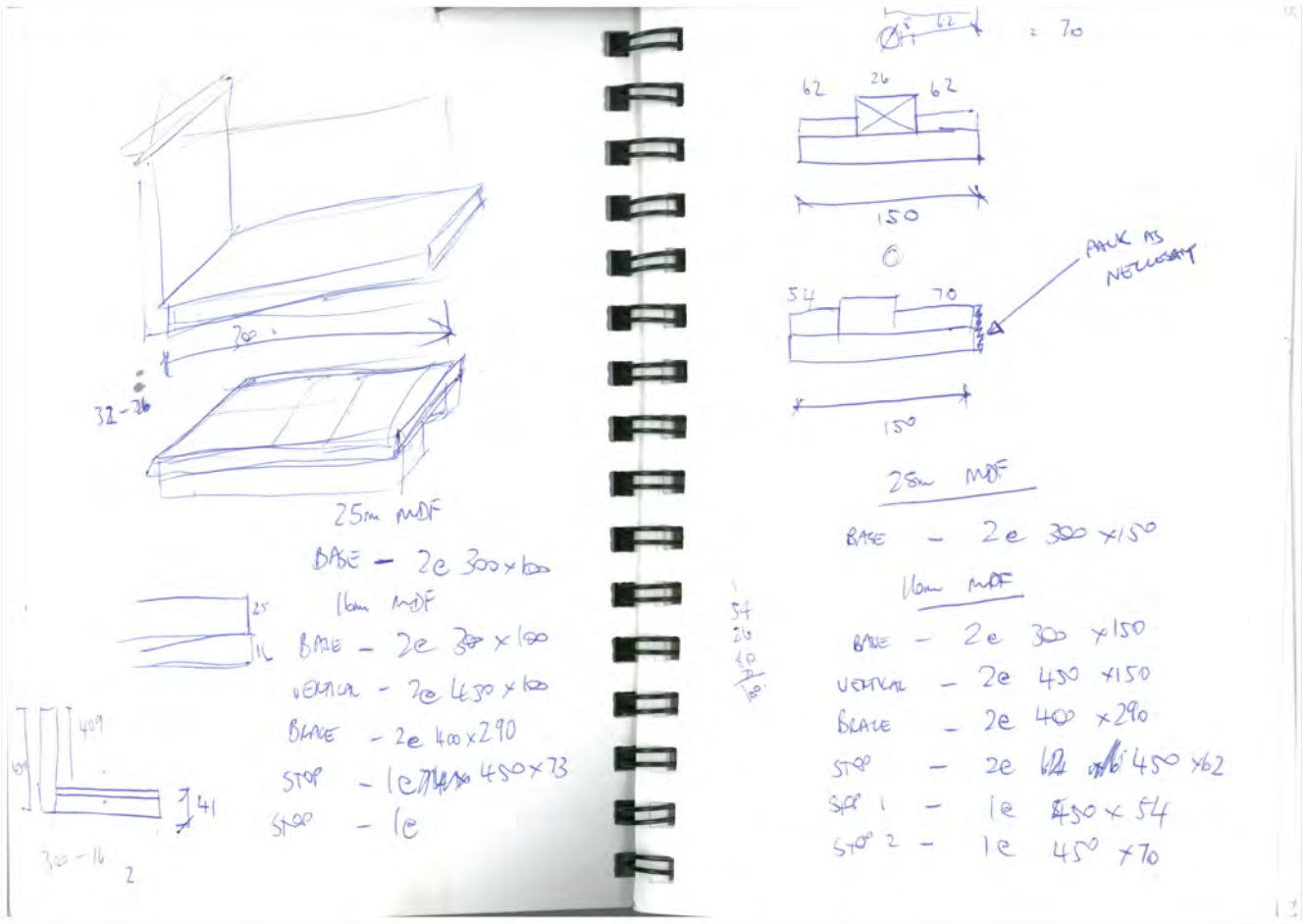




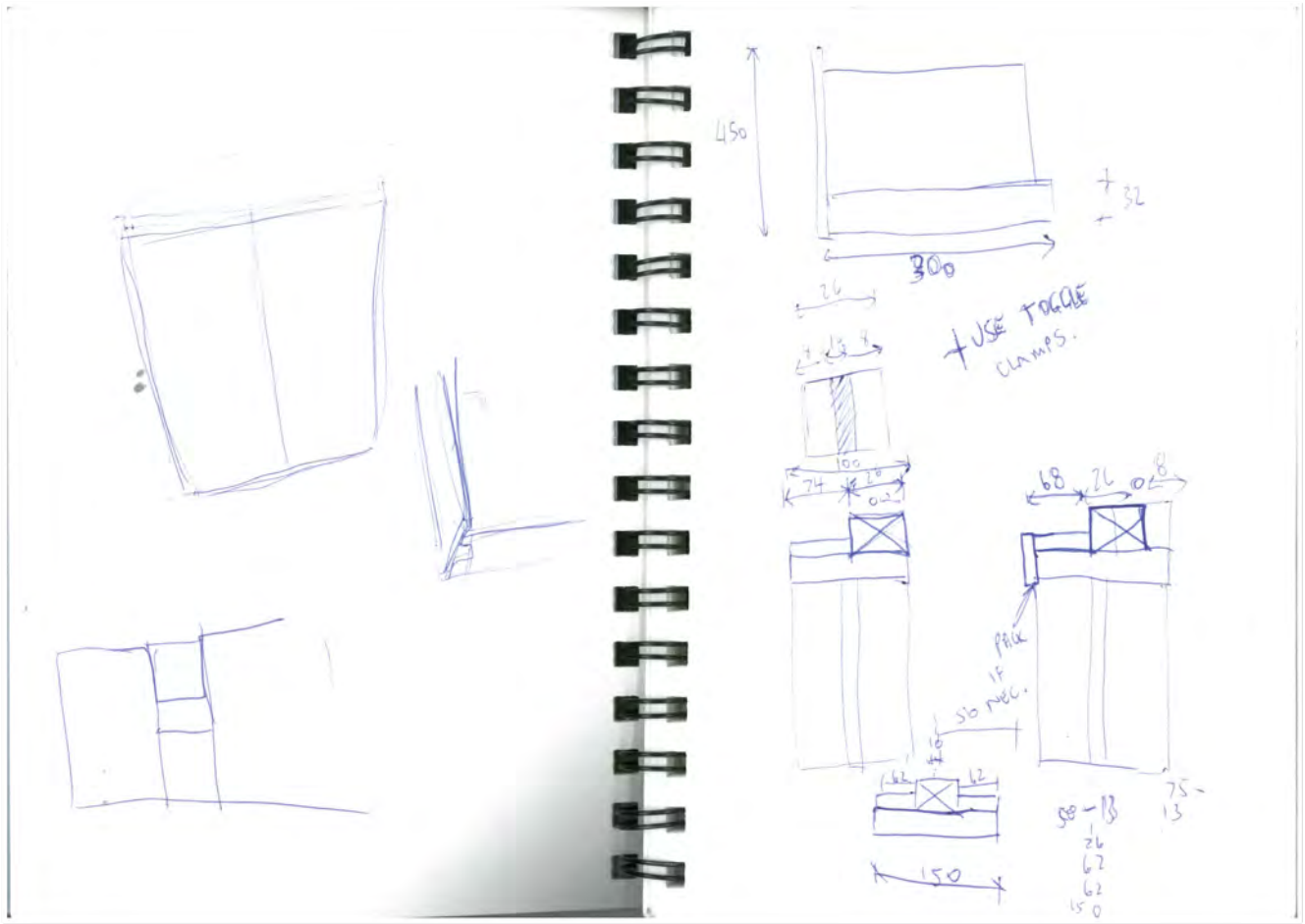




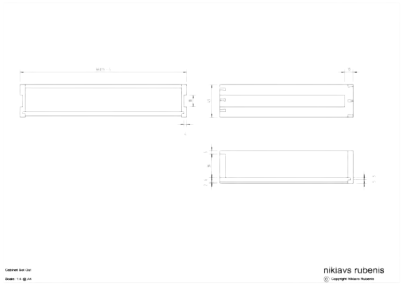
A1.5: Sketches (scanned).

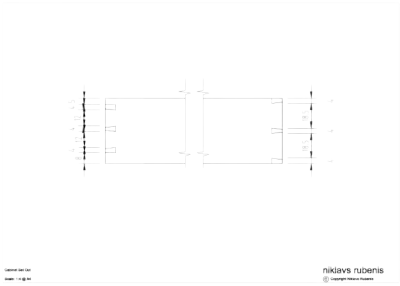


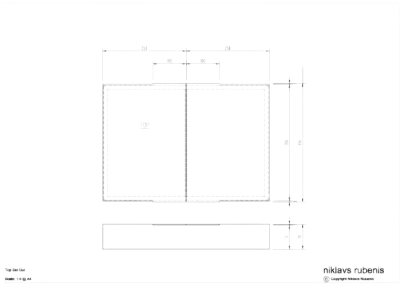
A.6: Dimensions and calculations from sketchbook (scanned).

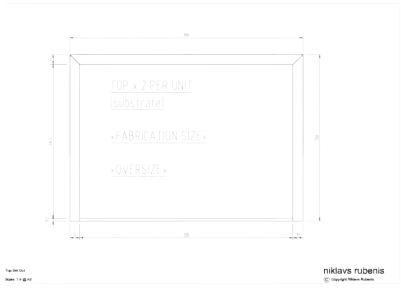


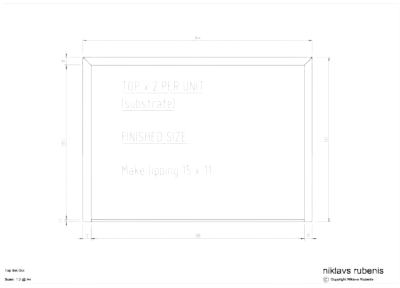
A1.7: Working drawings (CAD).

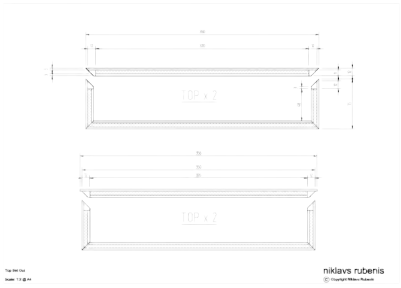


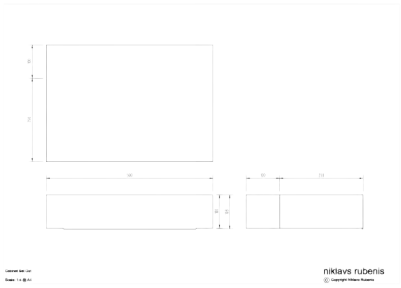


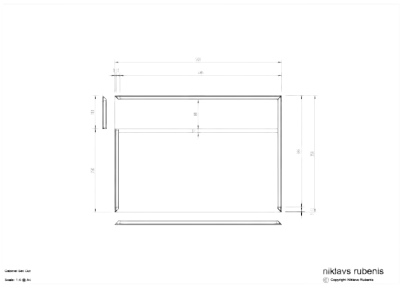


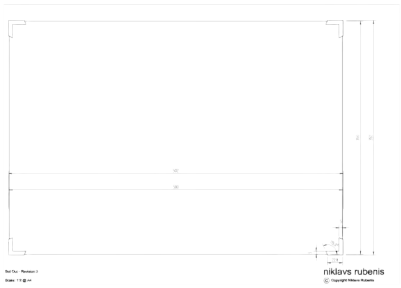


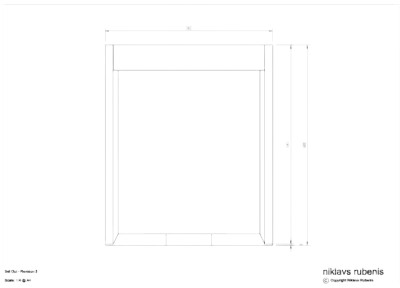


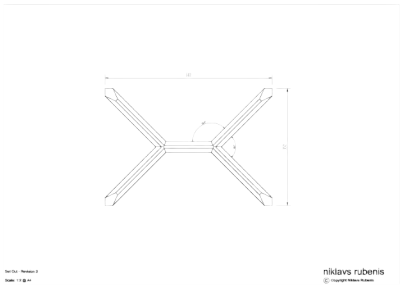


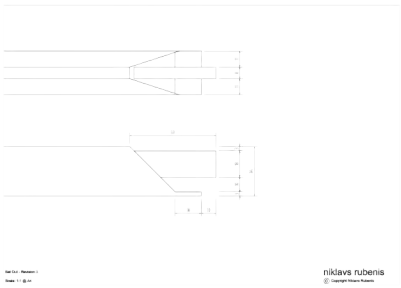


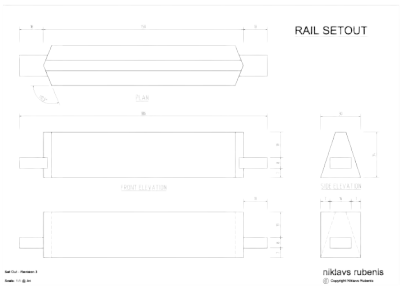


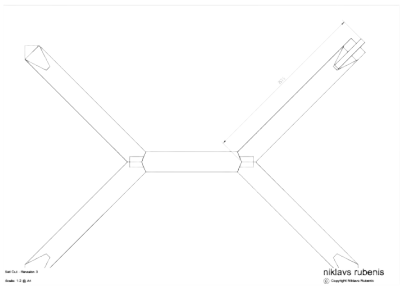


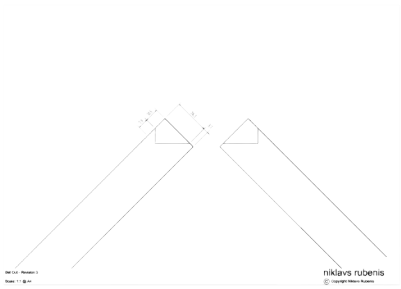


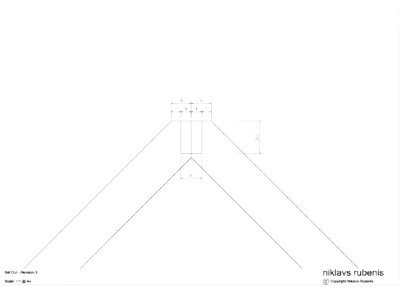


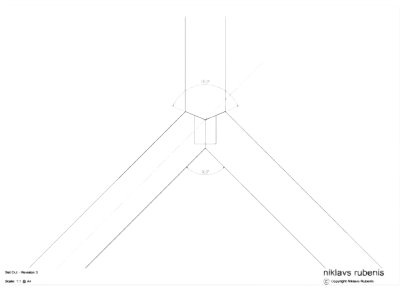








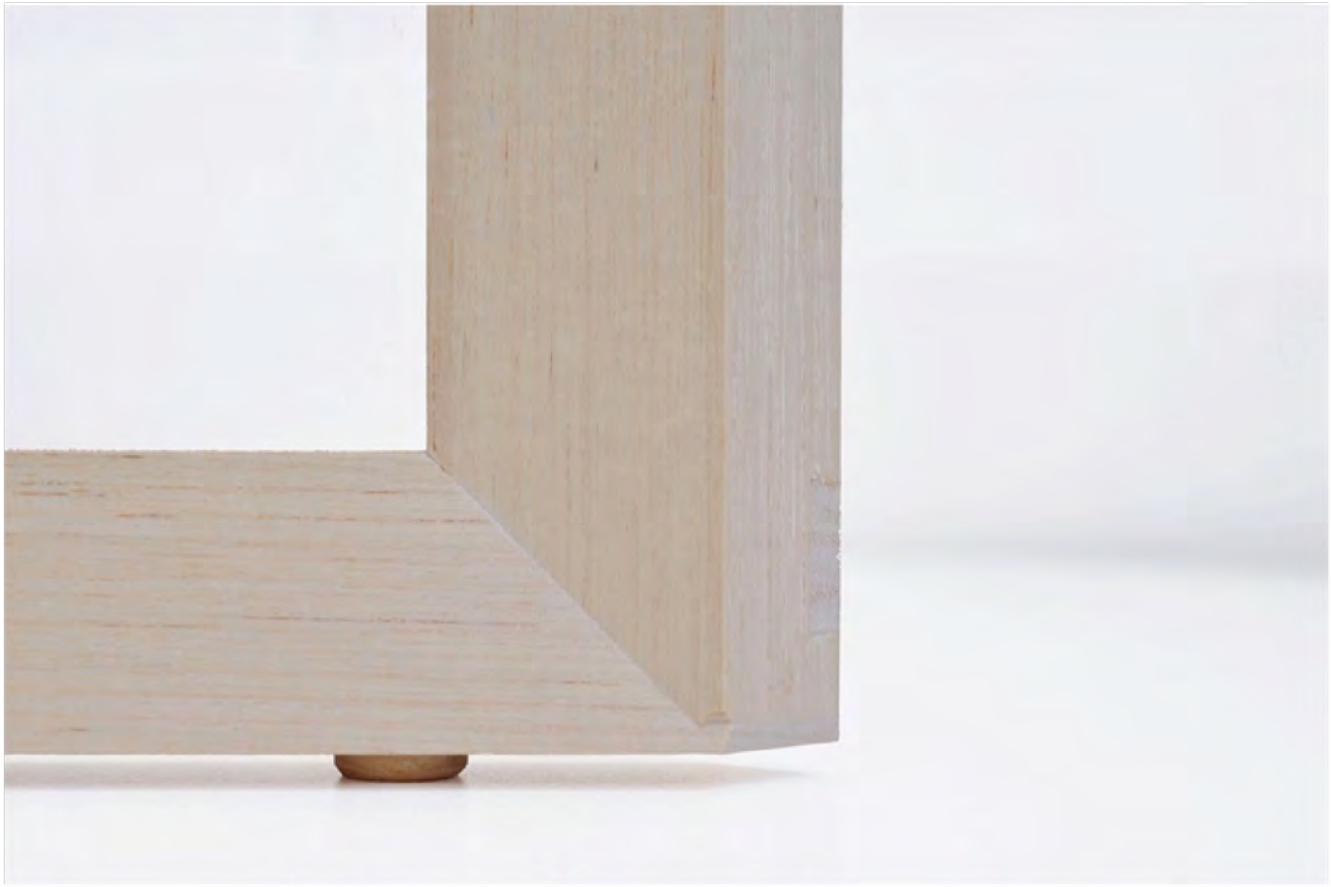




Above Left: *A1.8: Joinery tests and sketches.*
Above Right: *A1.9: Joinery tests and sketches.*
Left: *A1.10: Hand planing drawer fronts.*

A1.11: Fitting two side tables with slide out tops (workshop).

A1.12: Fitting two side tables with slide out tops (workshop).



Top: A1.13: Four Side Tables (leg detail).
Bottom L: A1.14: Four Side Tables exhibited as part of "Maker+Designer".
Bottom R: A1.15: Four Side Tables exhibited as part of "Citizens of Craft".

2. PROCESS: STOOL PROTOTYPE #4

A2.1: Stool Prototype #4.
Image courtesy Craft ACT: Craft and Design Centre.

Project Overview
Stool Prototype #4 is constructed from used high-density polyethylene (HDPE) milk bottles and discarded wood. The entire assembly, including the plastic seat webbing, comes apart to occupy a small footprint. Achieved by re-appropriating traditional construction techniques that do not employ the use of glue, screws or mechanical fixings (known as 'dry assembly'), the structural work is based on design-reversibility influenced by conservation. The materials are manipulated using digital and static woodworking machinery, industrial machines common within local cabinet making or signage industries. The milk bottles are sliced, straightened and laser cut with a specific pattern that allows folding to increase strength as functioning seat webbing. A computer numeric control (CNC) router was employed to process several components for efficiency.

The purpose of engaging both production method and reuse of material was to use readily accessible 'local' resources, although highly likely the materials used are not sourced or manufactured locally. The stool fuses craft skills with efficient manufacturing as a test for turning a devalued resource into an up-cycled commodity.

Details
Name: Stool Prototype #4
Year: 2014.
Materials: Laser cut HDPE from discarded milk bottles (seat) combined with Tasmanian Oak from a reclaimed bed head (under structure).
Dimensions: 470 x 340 x 400 mm.

Exhibited as part of:
Embracing Innovation: Volume 4 (Craft ACT: Craft and Design Centre, Canberra ACT). July - August 2014.

Exhibition Expression of Interest, March 2014
Abstract
Part 1
"Design is the first signal of human intention…and if our intention is to destroy the planet, we're doing a great job" [1].

The mechanics of 'sustainable' and responsible design is not new, history has provided many insights and examples. Yet in the 21st Century, as resources continue to deplete and waste continues to increase [2], 'sustainability' within everyday designed objects is a widely debated concern. Even with an already existing historical framework to build from, evidence suggests however, that whatever has defined 'sustainability' is actually not that sustainable. Social, cultural, ethical, historical, environmental, technological and even emotional layers are now all equally important parts that make up the complexities of the process of responsible design. Therefore, I have been pursuing PhD practice-led research in an attempt to understand 'sustainability' and to re-evaluate my understanding of design. Put simply, I am pursuing a 'better' or more deeply 'aware' practice.

Although my work is largely concerned with the designing and making of furniture, predominately in wood, I do not see 'design' as a mutually exclusive process to any one discipline. Design, rather, is a process and way of thinking that can be applied to anything, at anytime, in any given situation and with any medium, capable of affecting everybody. Design is about intent and is a powerful tool. Considering that everything that exists within the built and digital environments is an act of design, designers have great responsibility and must understand every implication of their decisions when bringing something tangible or non-tangible into the world.

Part 2
" …we need to cultivate the ability to identify and extract design and sustainment principles from historical material and then transpose them into appropriate futuring forms" [3].

To put this 'responsible design decision making' into practice I have inverted my design process to be more akin with conservation. The field of conservation works from a different perspective and in reverse to the process of design. It focuses on the end product, usually traditional or historic. Design begins at a product's inception so there lays a potential for a dialogue to be cultivated between these two processes. Working in reverse shifts focus and raises important questions about appropriateness, methods, processes and design. It also focuses on craftsmanship and skill.

Part 3

'Sustainable' design may indeed be a contradiction. To actually attain 'sustainability' may be just a myth, an "…unattainable goal – a goal which, nevertheless, may consider worth aiming for, but which forever eludes actual arrival" [4]. Yet, without this myth or without a level of urgency, change may never come about and innovative or alternative ways of approaching designed objects may never materialize.

The work I am proposing for Embracing Innovations Volume 4 will be strictly a prototype, a three dimensional idea for discussion and feedback; a physical piece of furniture that aims to combine this mode of thinking as outlined in my attached abstract.

To date my work has explored how meaning can be instilled within an object.

This has been combined with the technical investigation of re-appropriating traditional joinery techniques into contemporary structures utilizing a range of technologies, largely 'dry' structures.

Working within a two cubic meter volume, I propose an 'assembled' and an 'exploded' piece of furniture to best represent technical and conceptual thinking. Considering the work will be purely a 'prototype' aimed at promoting discussion, I will also utilize limited wall space to display process.

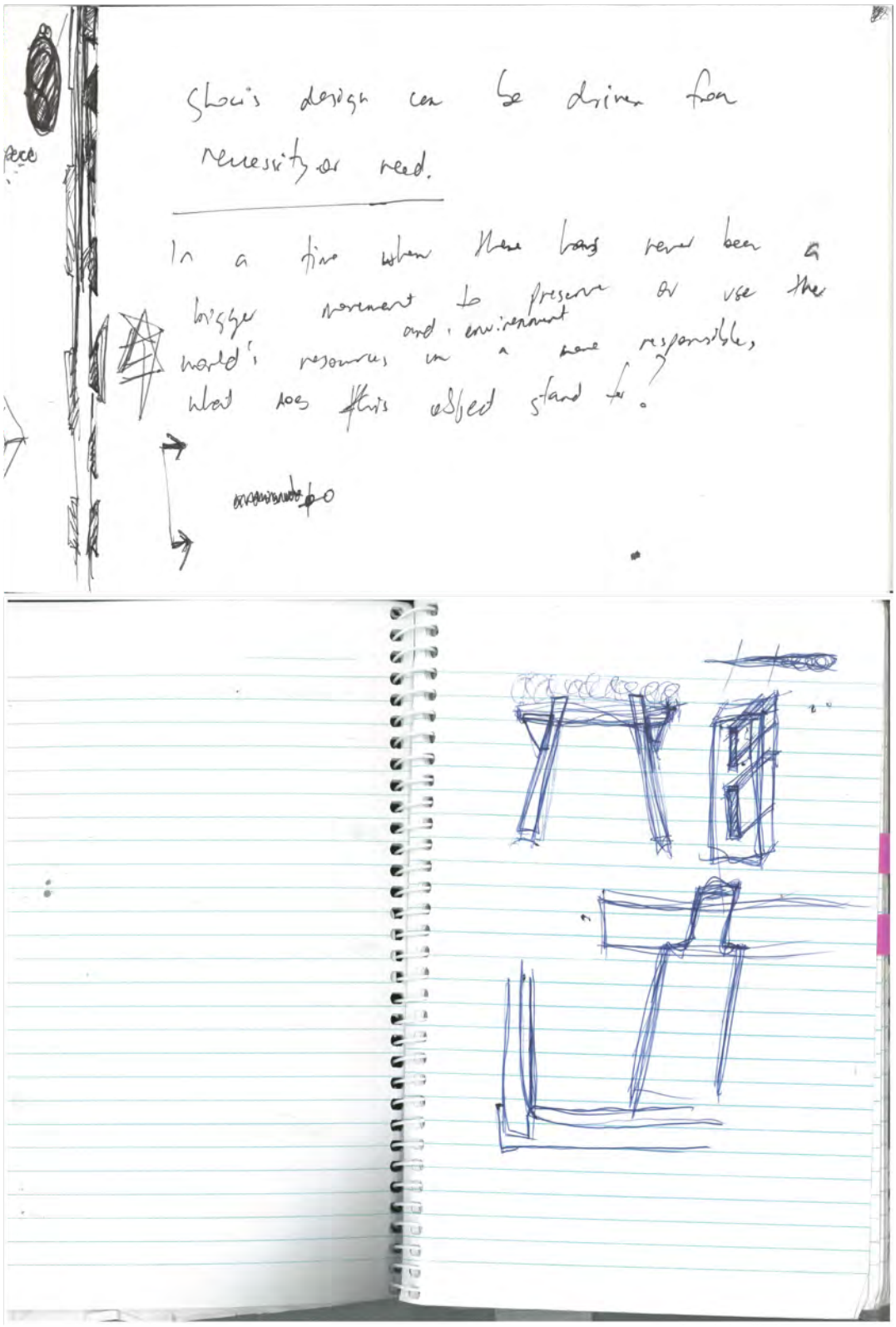
[1] The Guardian, "William McDonough - Upcycling: making design effective, sustainable and values-driven – 2 May 2013," http://www.theguardian.com/sustainable-business/upcycling-design-sustainable-values (accessed 14 September, 2013).

[2] During 2006-2007, Australians generated approximately 43.8 million tonne of waste. On average this is 2080 kilograms of waste per person. It has been estimated that only half of this total was recycled and from 2001 to 2007, a 12% increase in landfill waste was recorded.
Australian Bureau of Statistics, Waste Statistics, added 05/02/2010 http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4613.0Chapter40Jan+2010

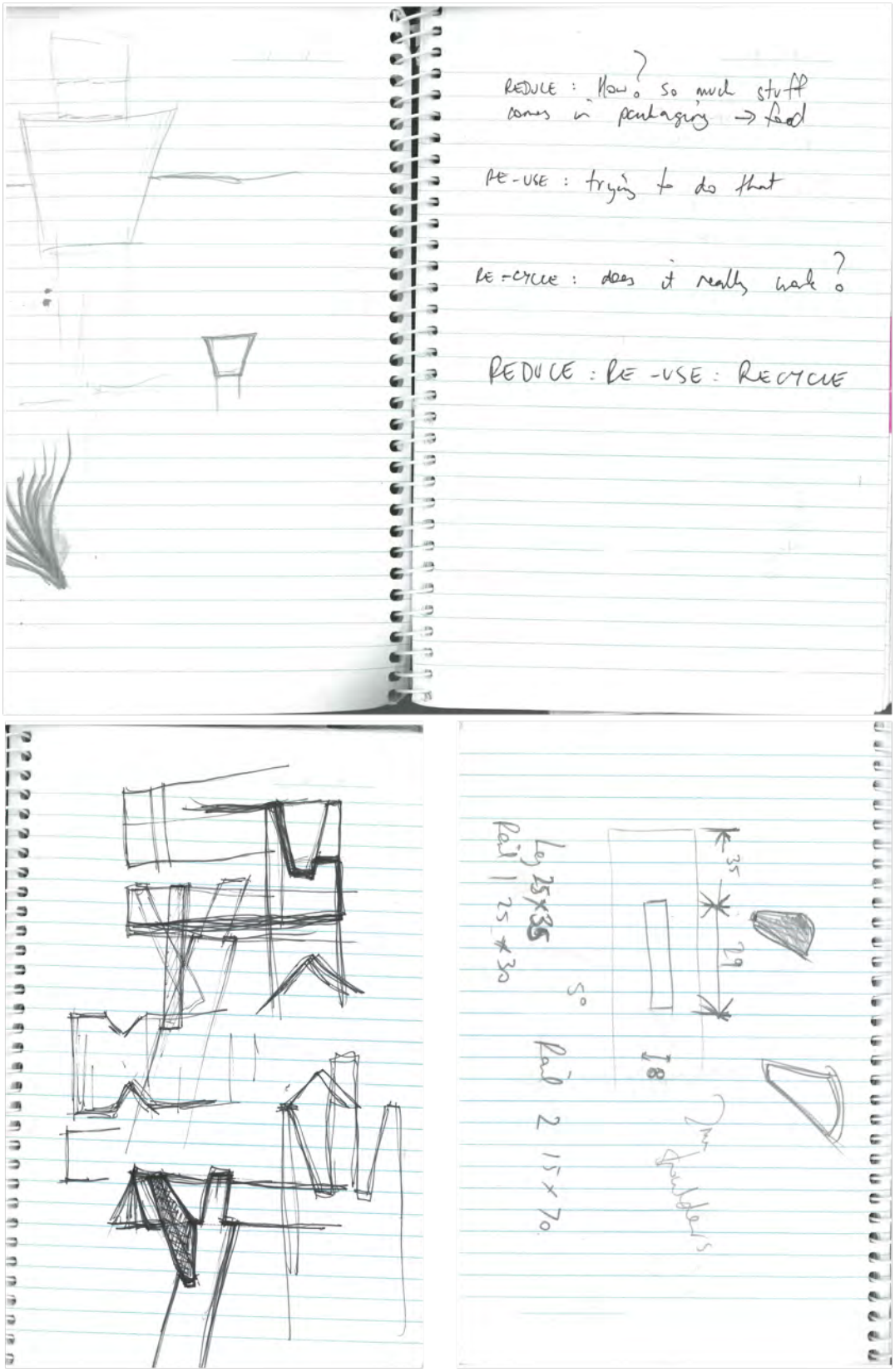
[3] Sustainability was defined by the Brundtland Commission in 1987 as "Meeting the needs of the present without compromising the ability of future generations to meet their own needs."

[4] Tony Fry, "Design Futuring: Sustainability, Ethics and New Practice", University of New South Wales Press Ltd, 2009, p.157.

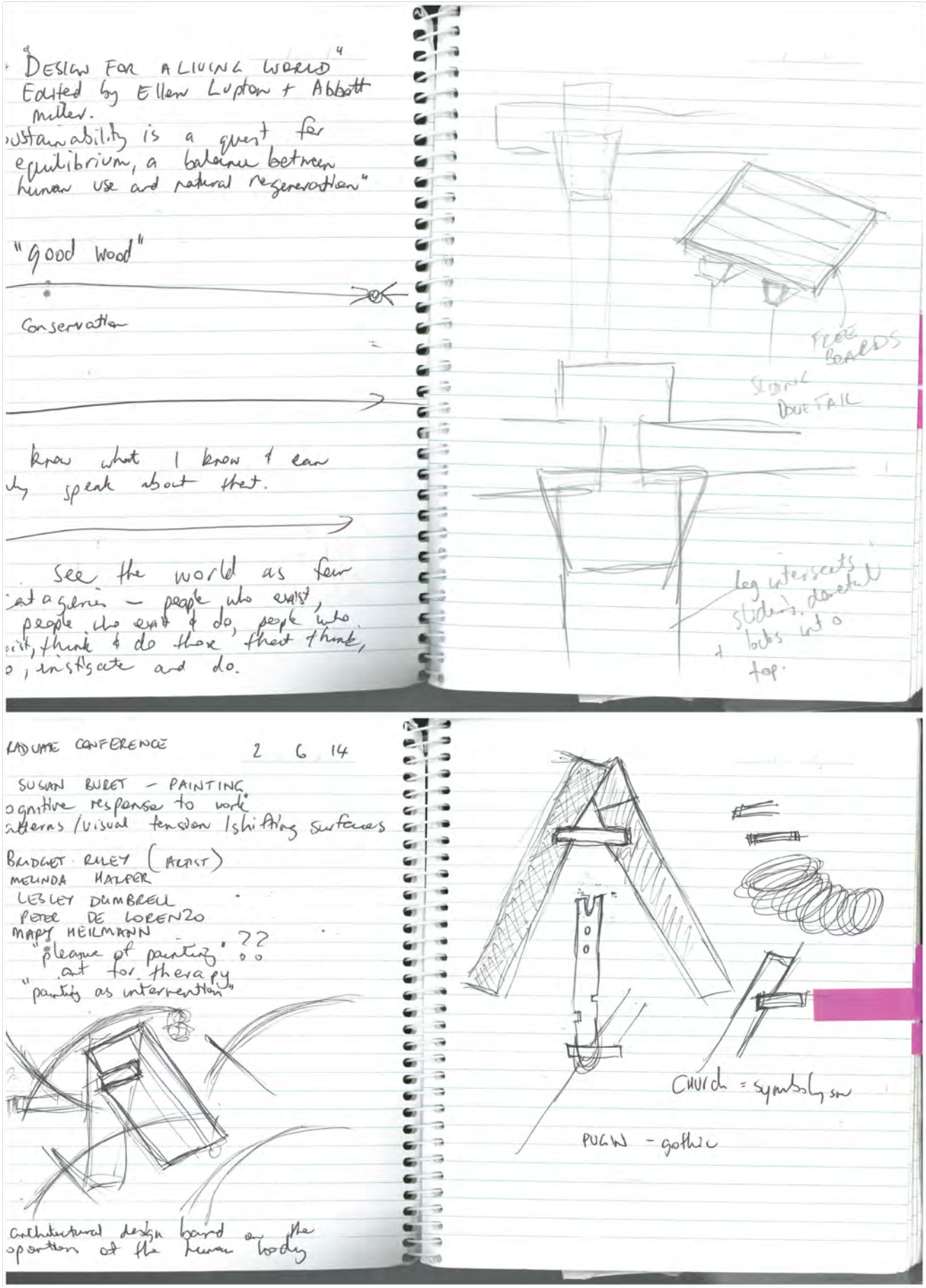
[5] Stuart Walker, "Sustainable by Design: Explorations in Theory and Practice", Earthscan UK, 2006, p.17.



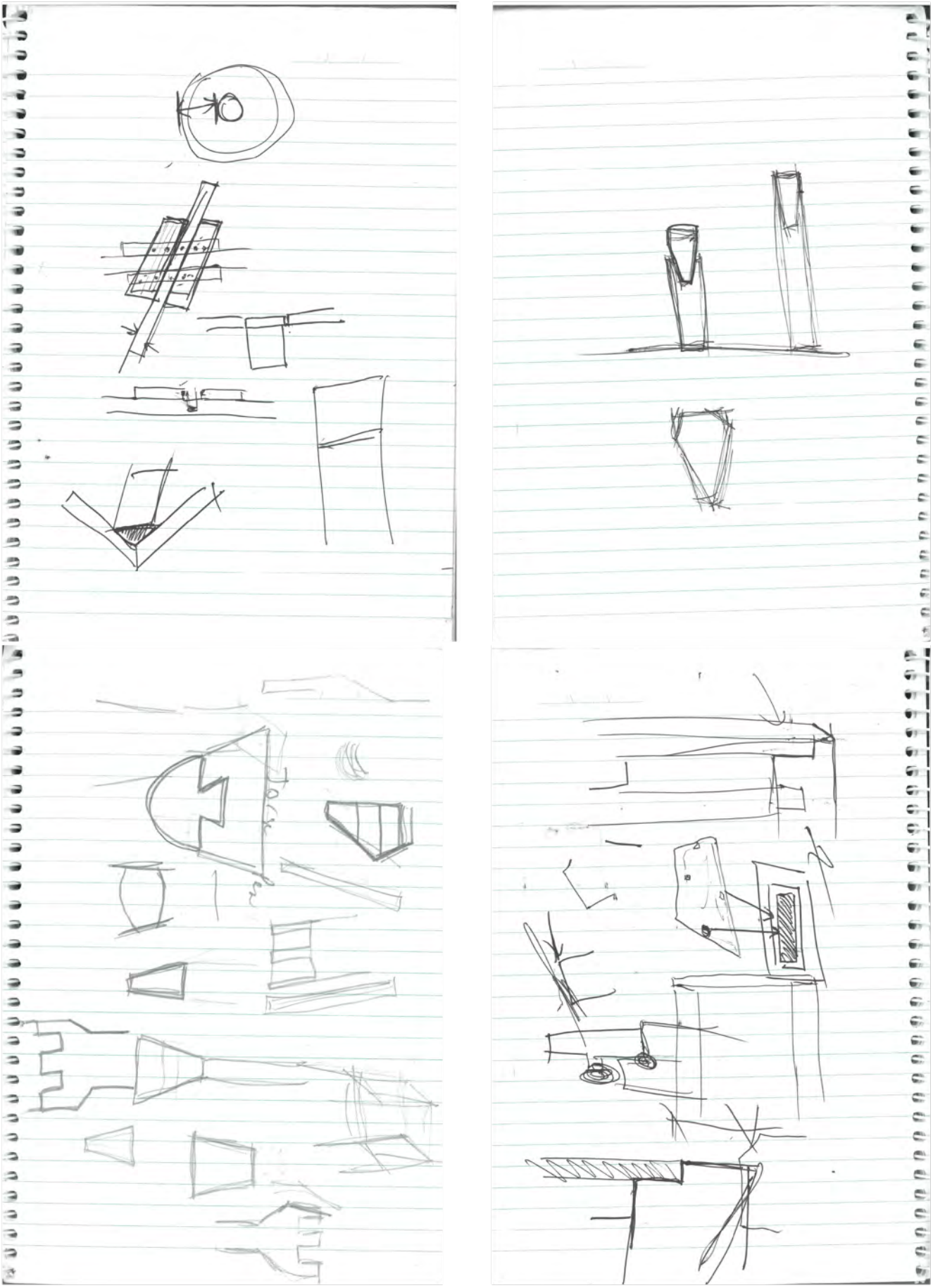
A2.2: Sketches (scanned).



A2.3: Sketches (scanned).



A2.4: Sketches (scanned).



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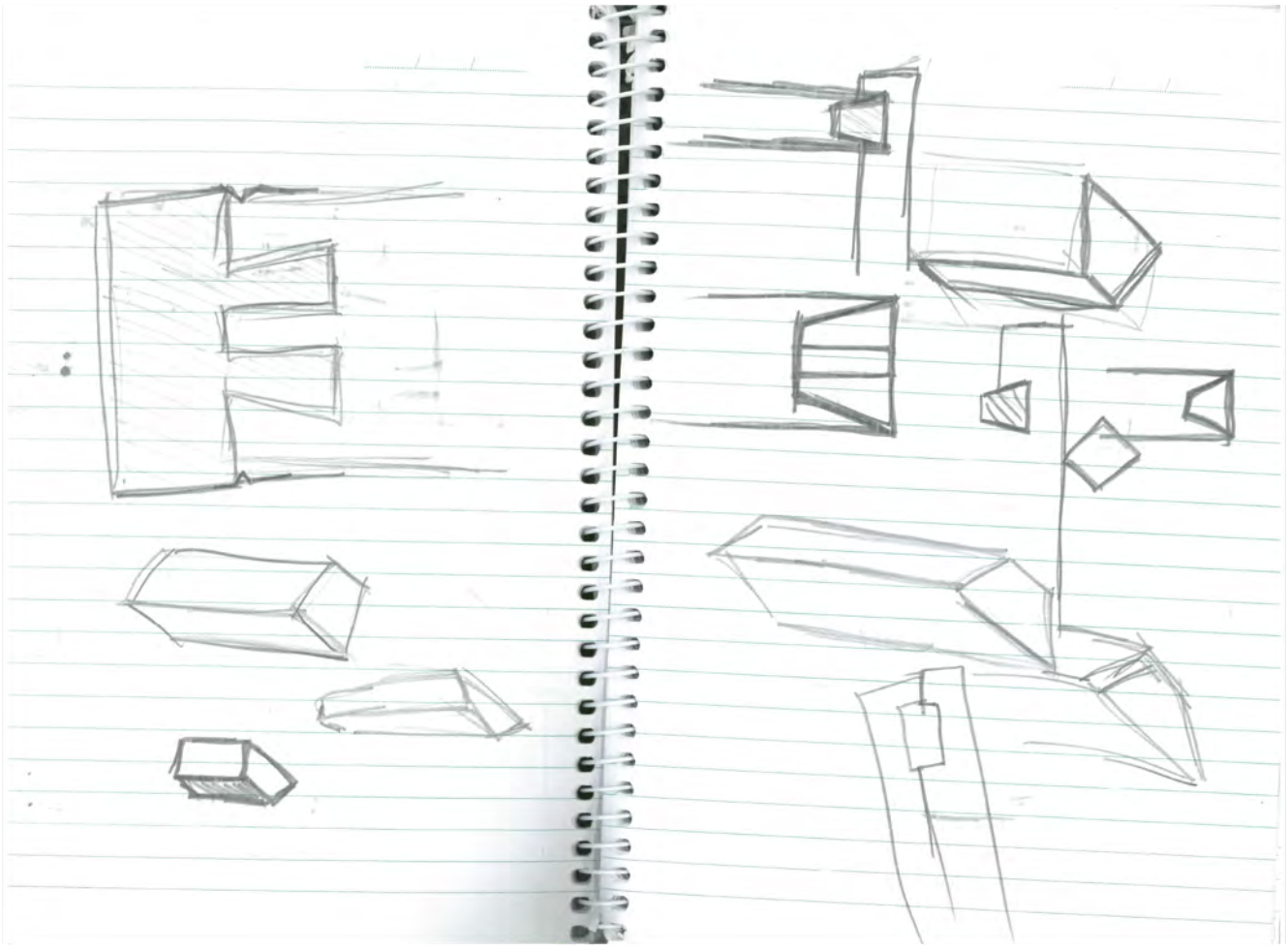
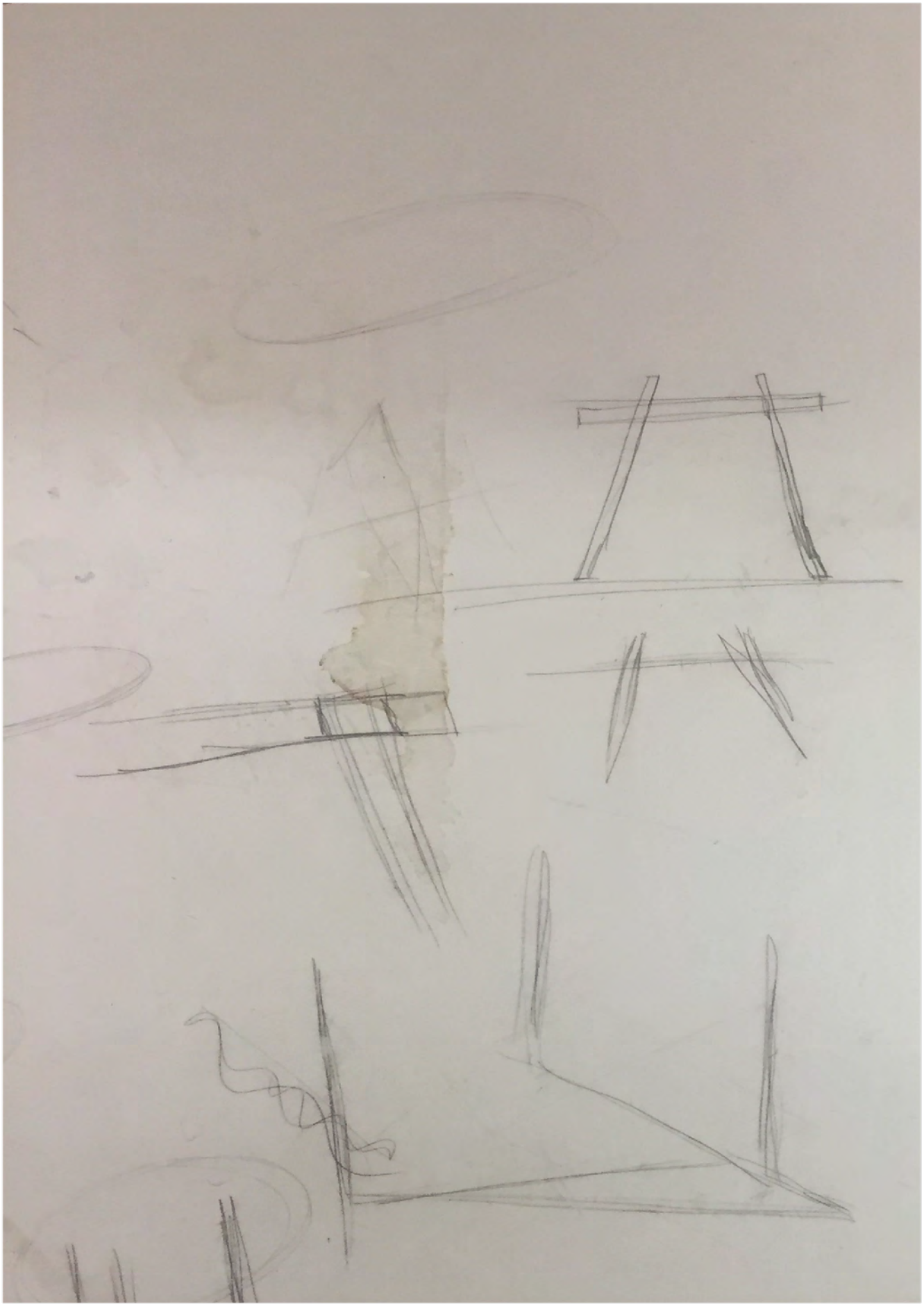
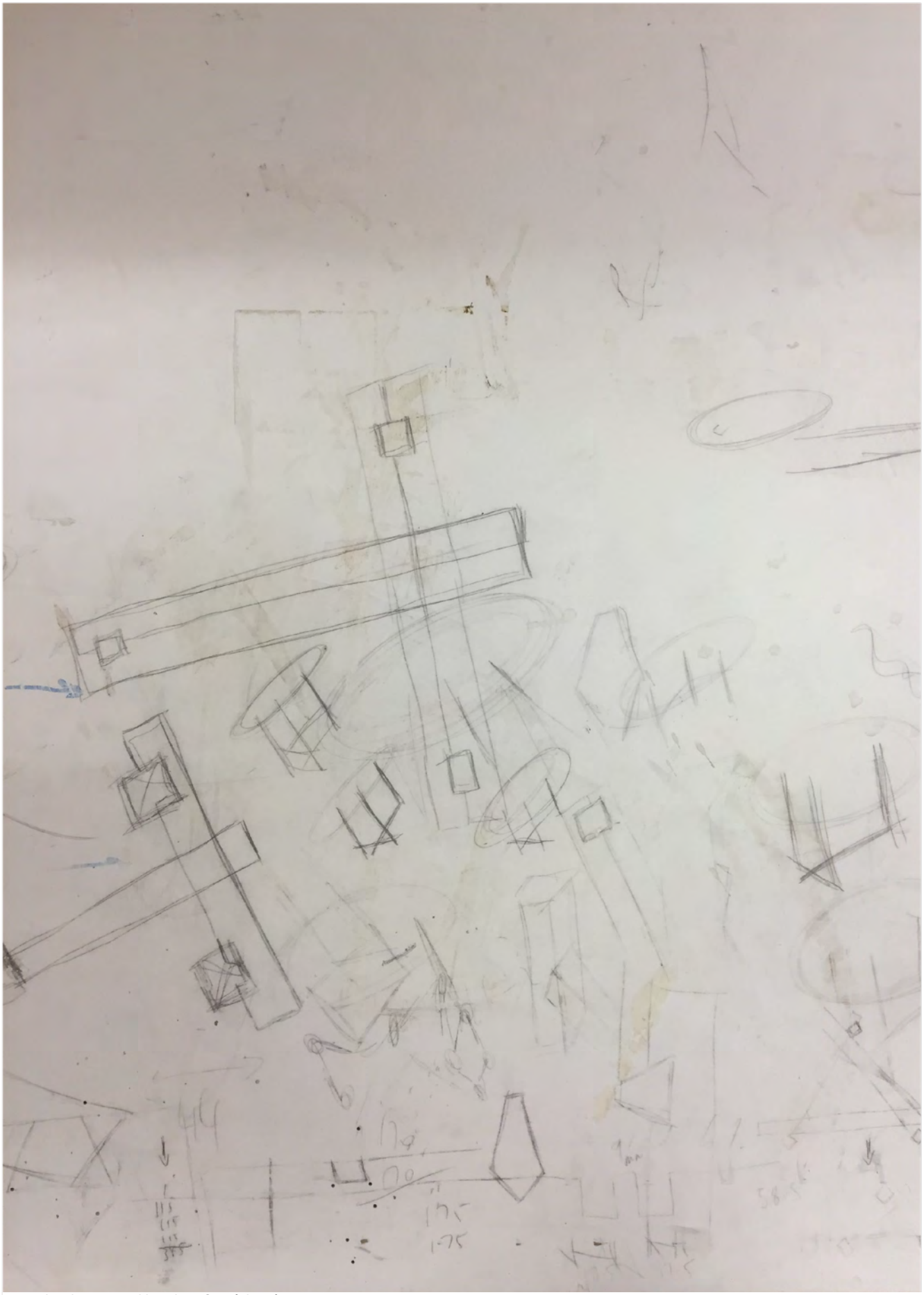


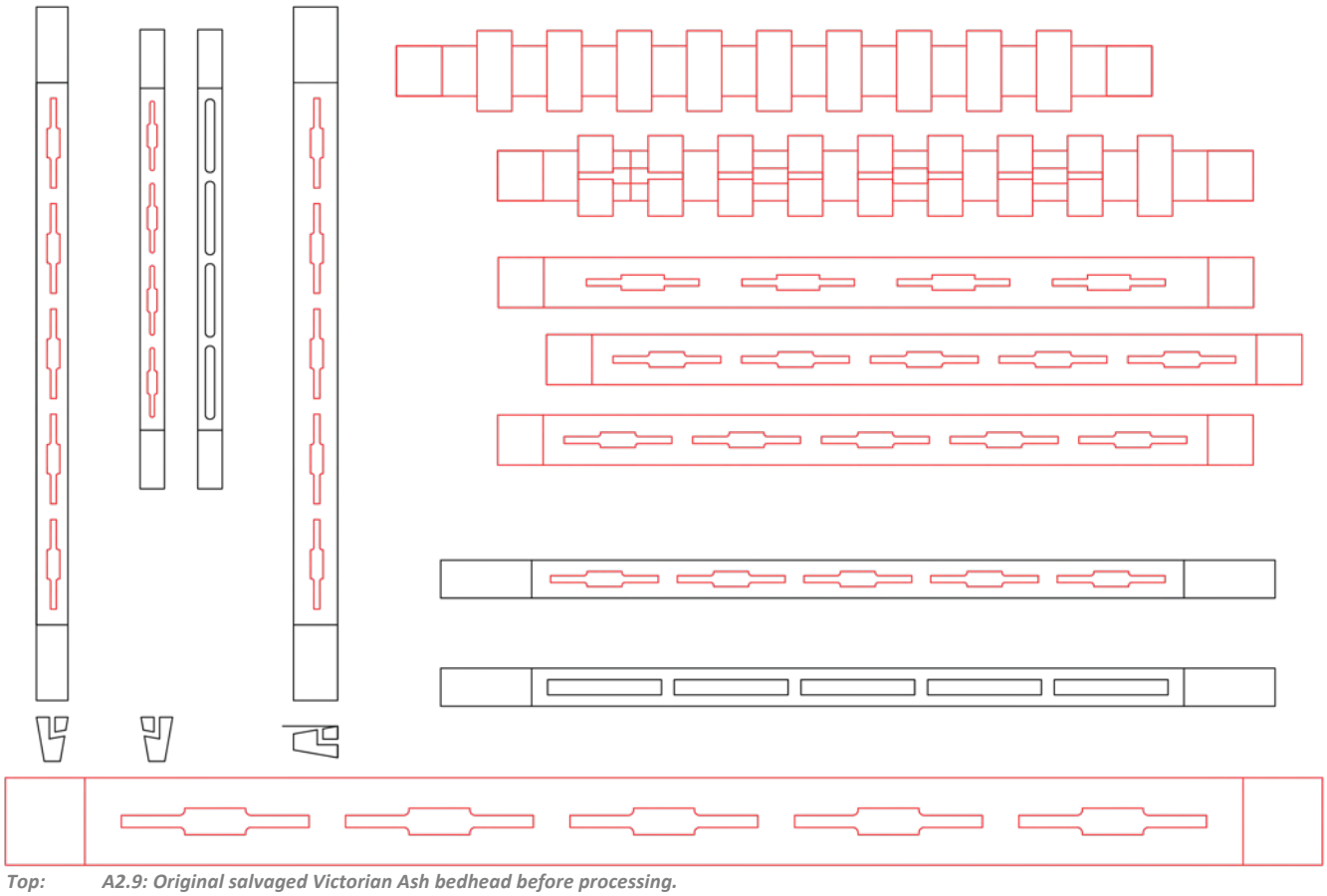
A2.6: Sketches (scanned).



A2.7: Sketches on workbench surface (photo).



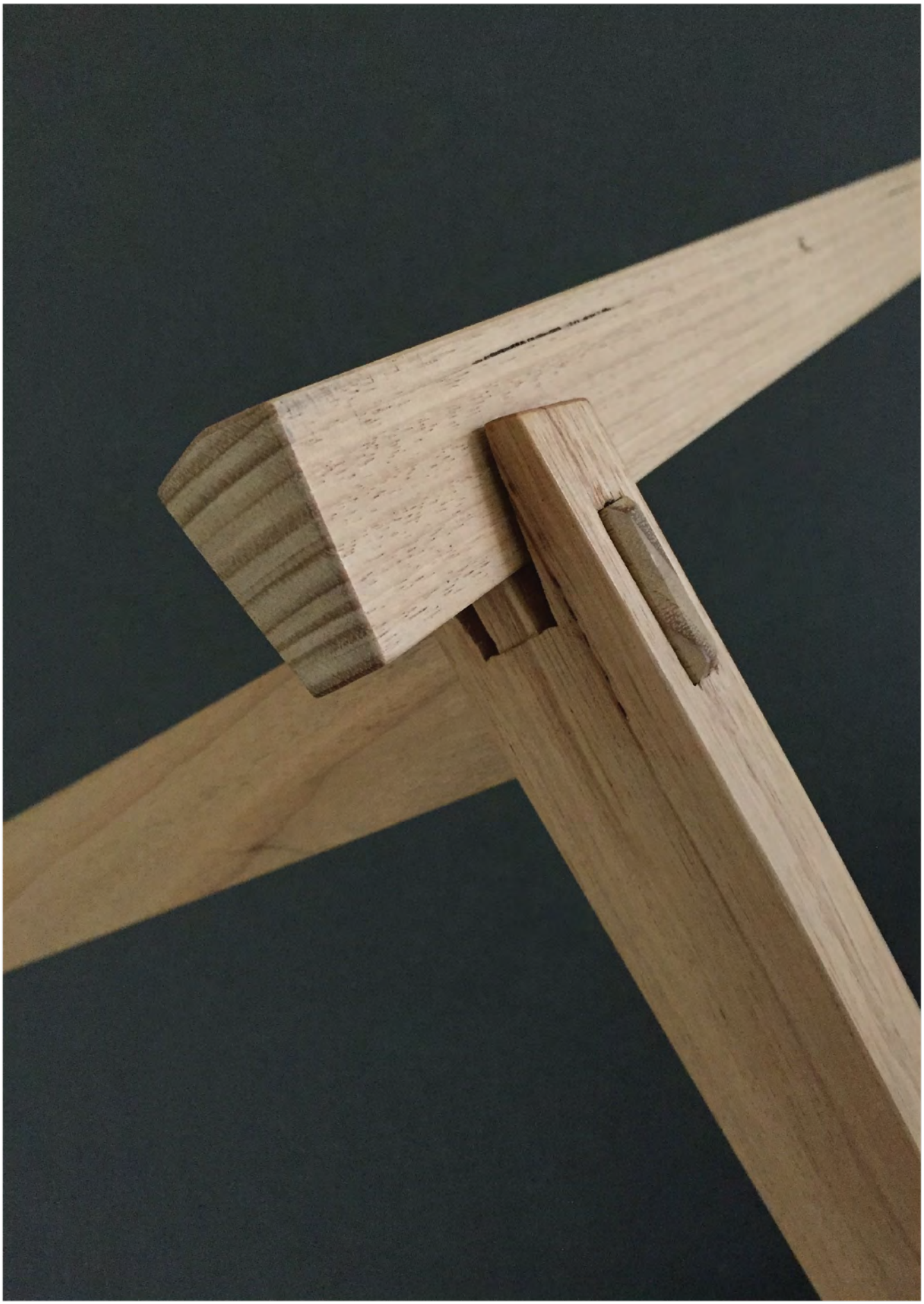
A2.8: Sketches on workbench surface (photo).



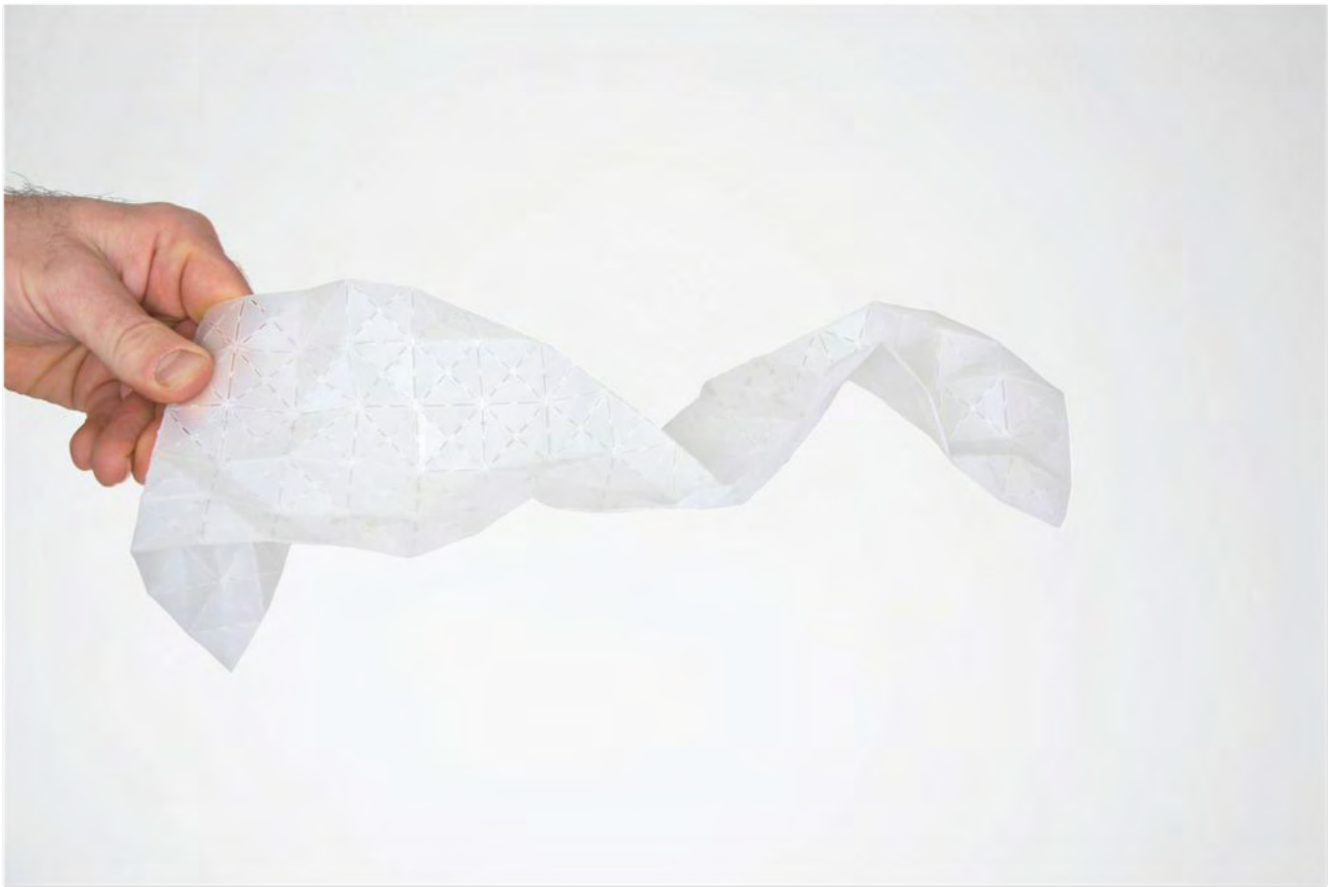
Top: A2.9: Original salvaged Victorian Ash bedhead before processing.
Bottom: A2.10: Initial CAD stool frame components (working drawings).

A2.11: Processed stool frame components.

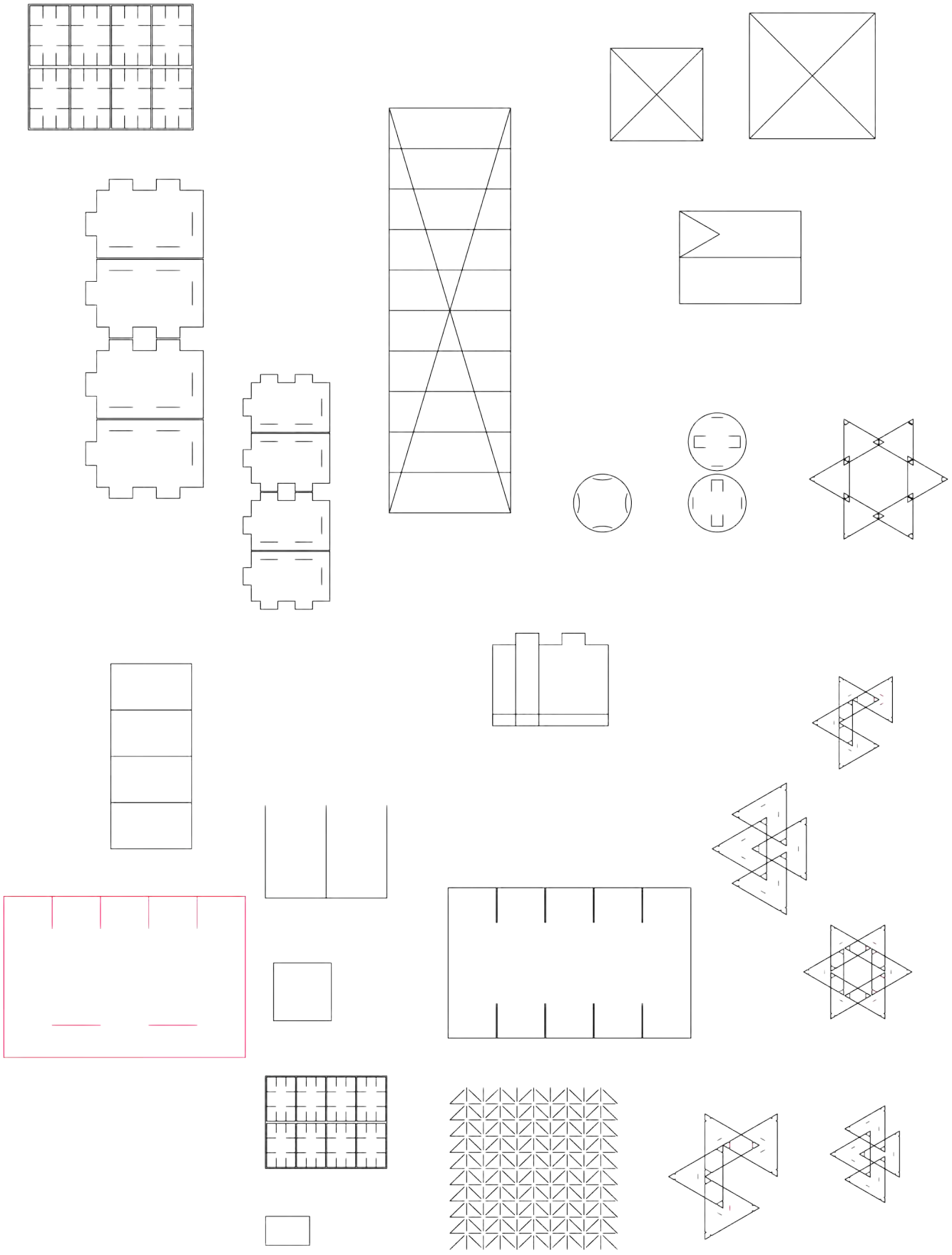
A2.12: Dry joinery used for legs and top frame.
Image by Halie Rubenis.



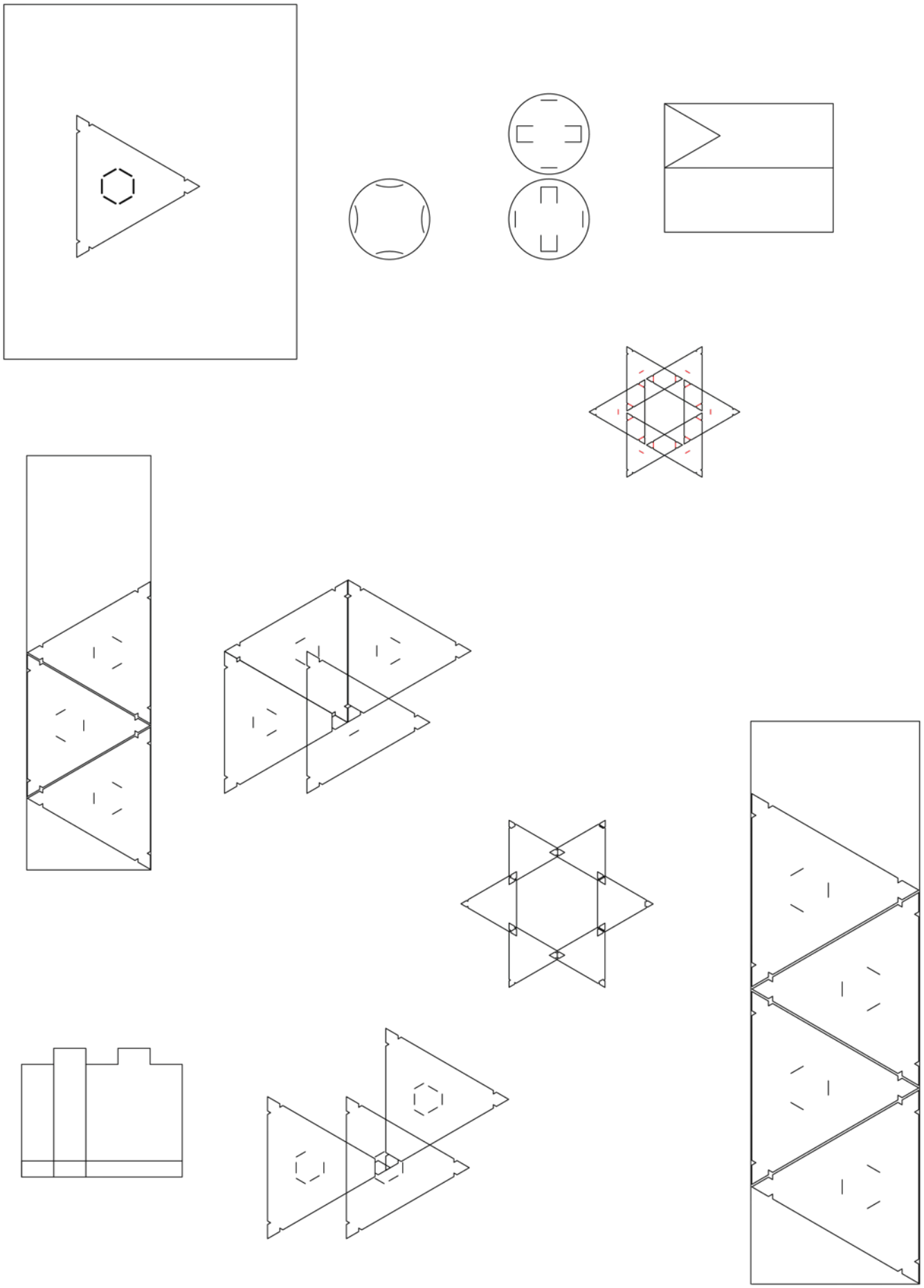
A2.13: Three-way dry joinery used for legs and top frame.



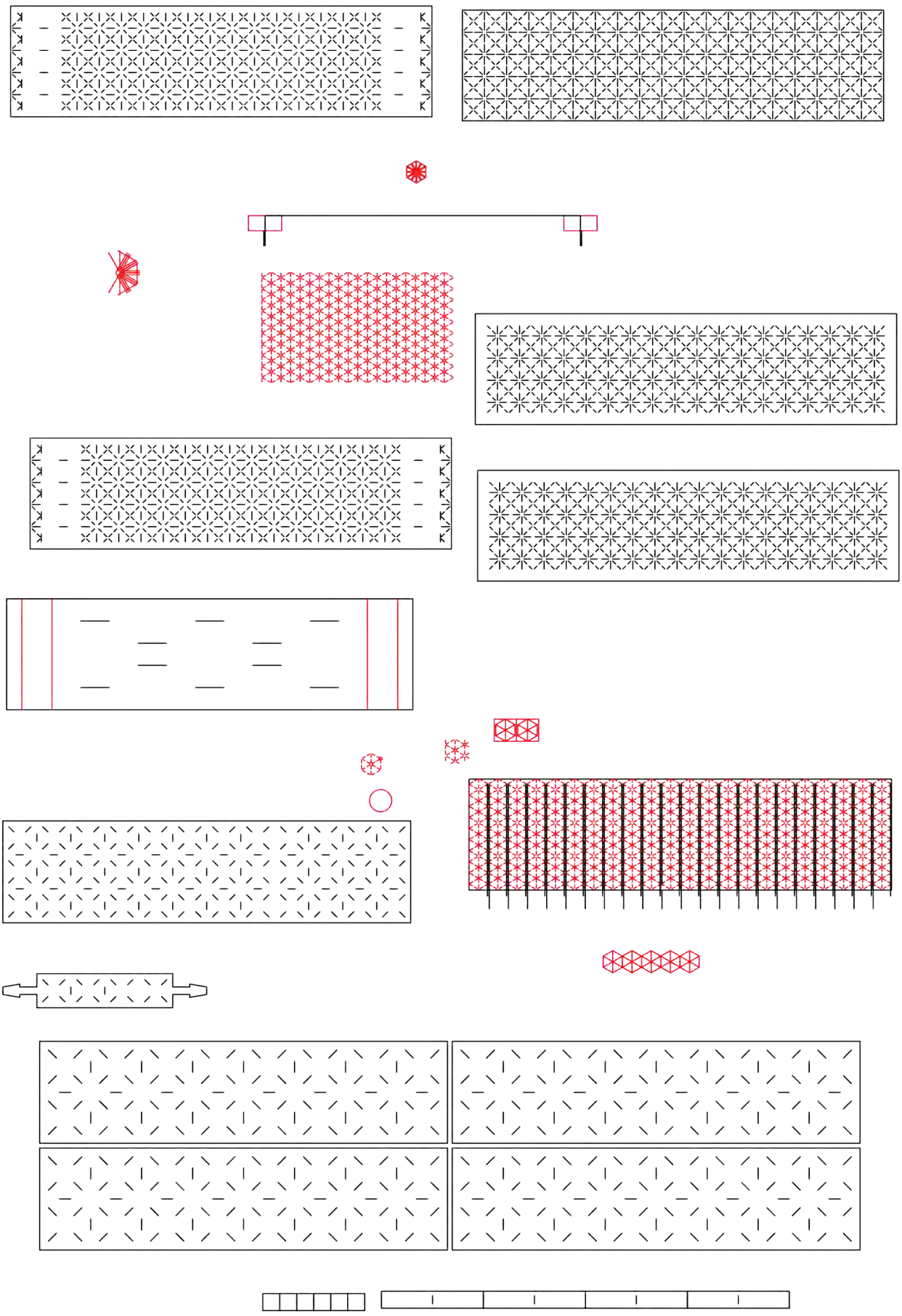
Top: ***A2.14: HDPE milk bottle.***
Bottom: ***A2.15: Laser cut milk bottle test*** (Image by Halie Rubenis).



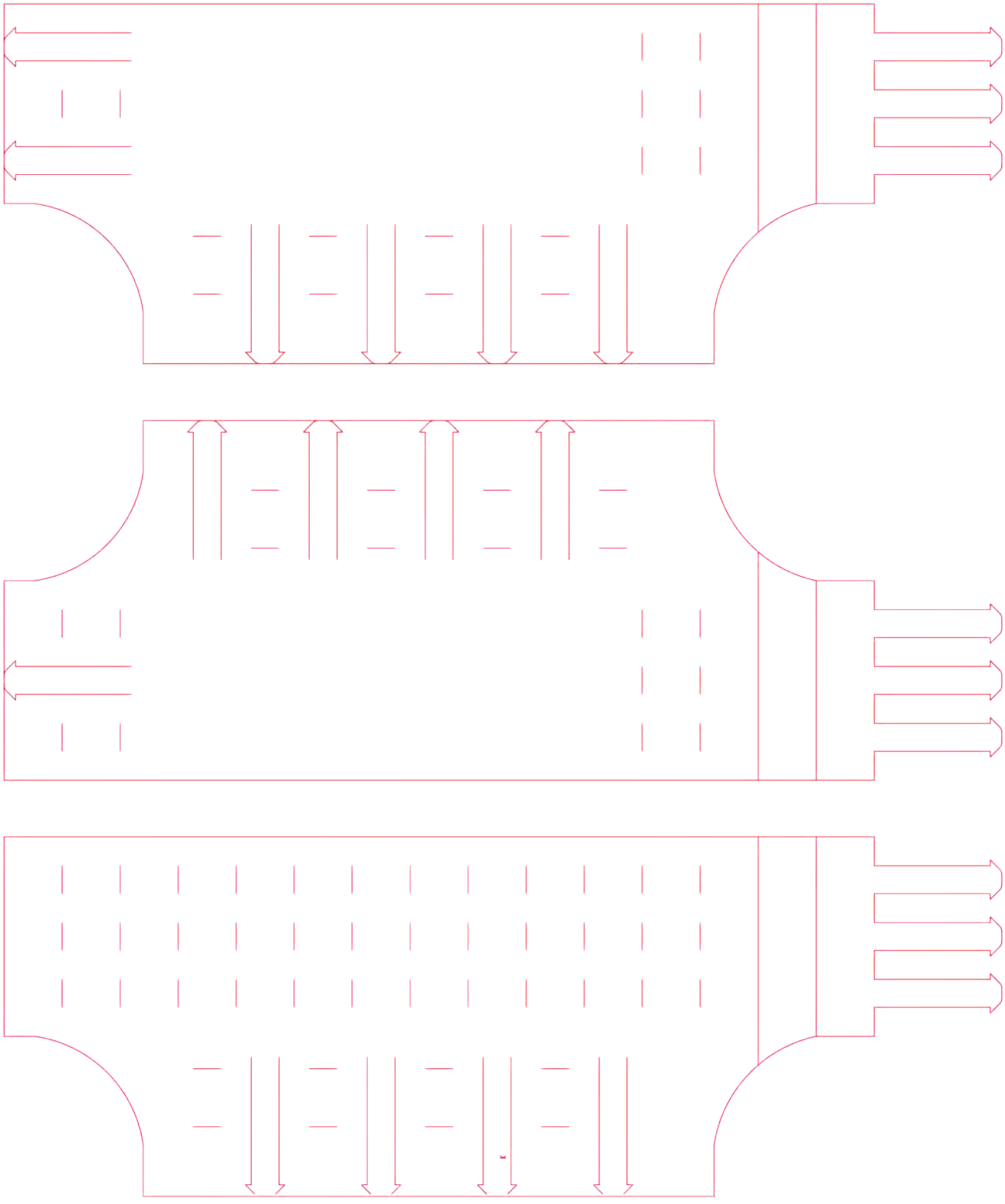
A2.16: Initial CAD drawings and tests of seat webbing using HDPE milk bottles.



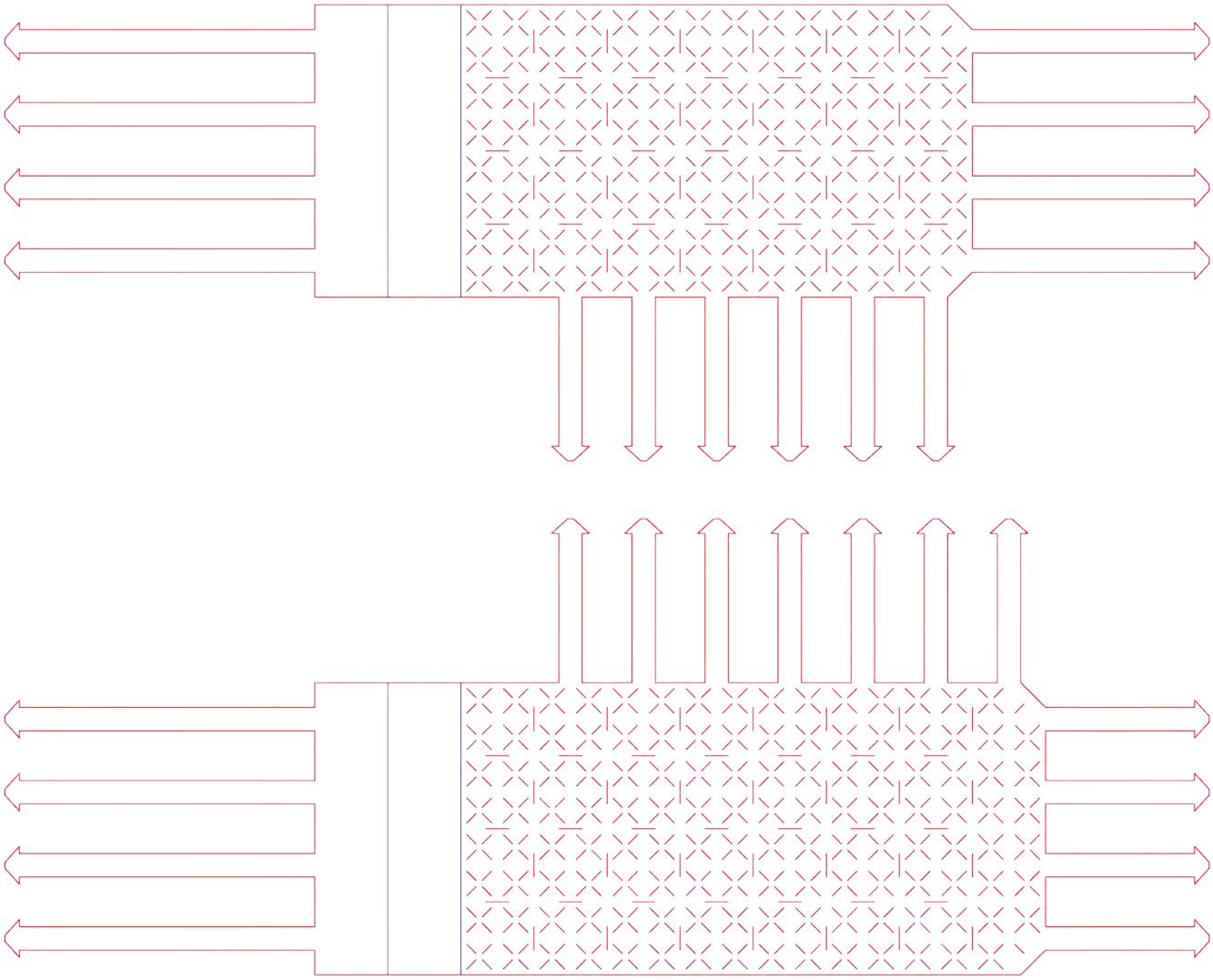
A2.17: Initial CAD drawings and tests of seat webbing using HDPE milk bottles.



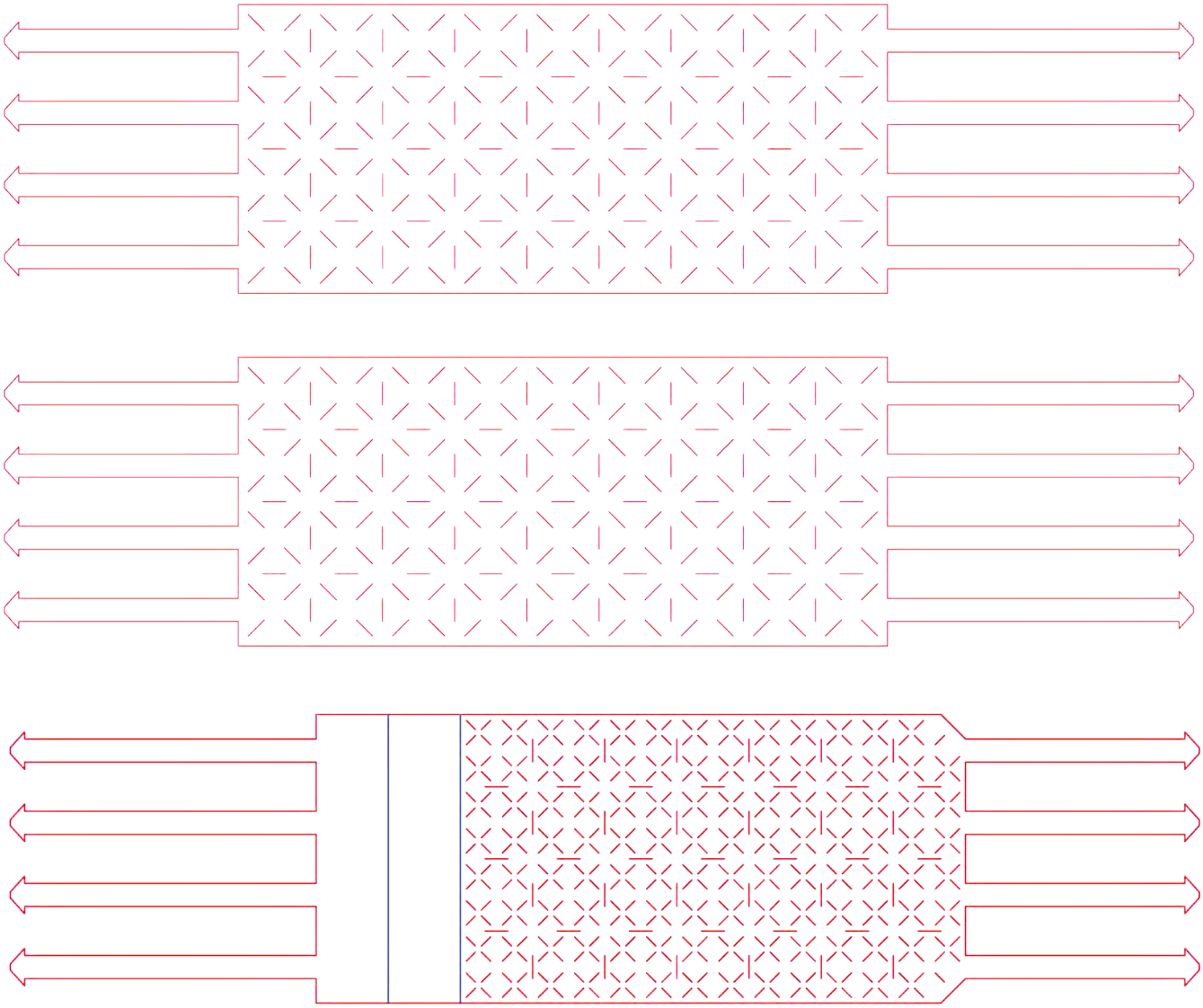
A2.18: Initial CAD drawings and tests of seat webbing using HDPE milk bottles.



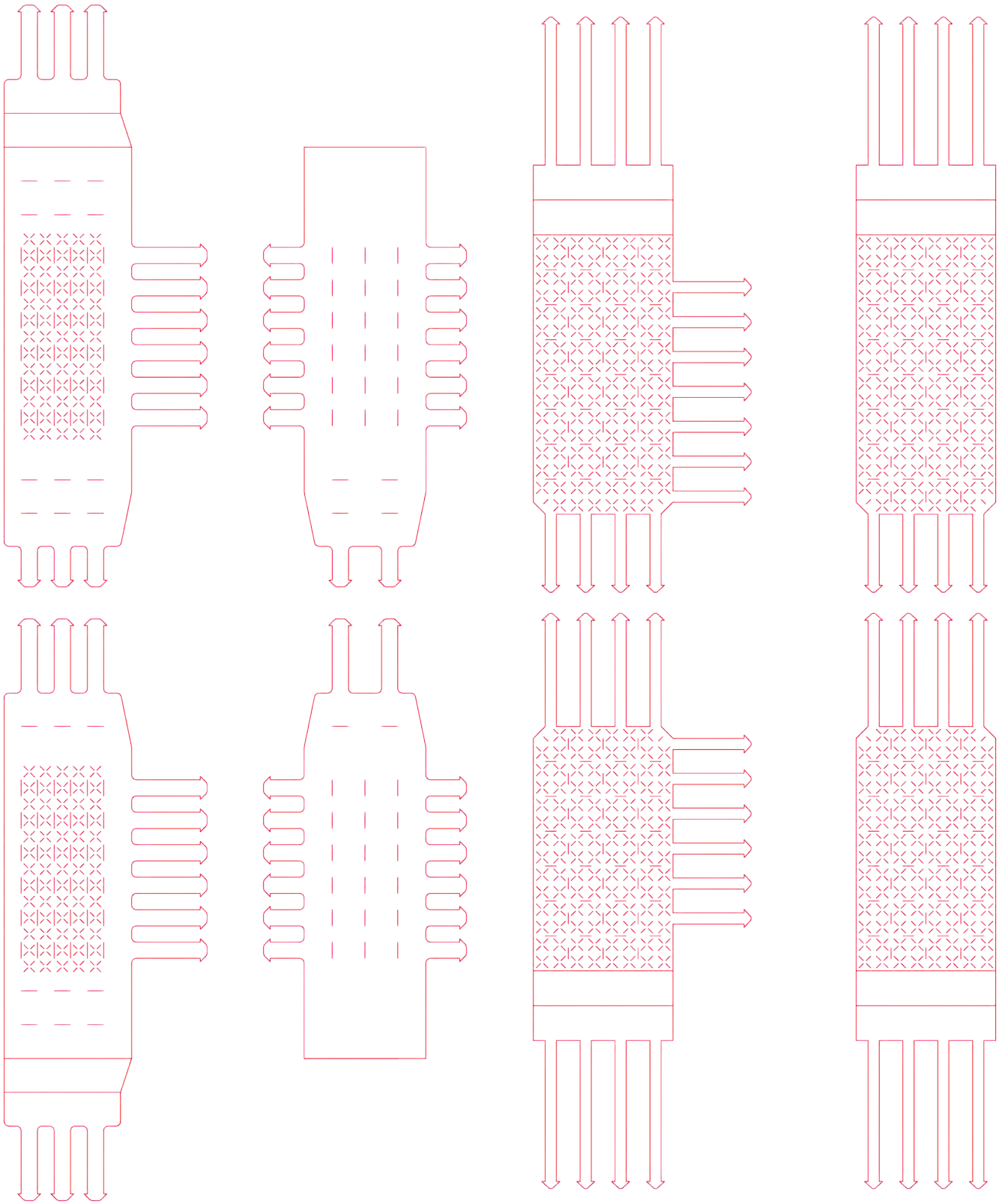
A2.19: CAD drawings testing interlocking seat webbing using HDPE milk bottles.



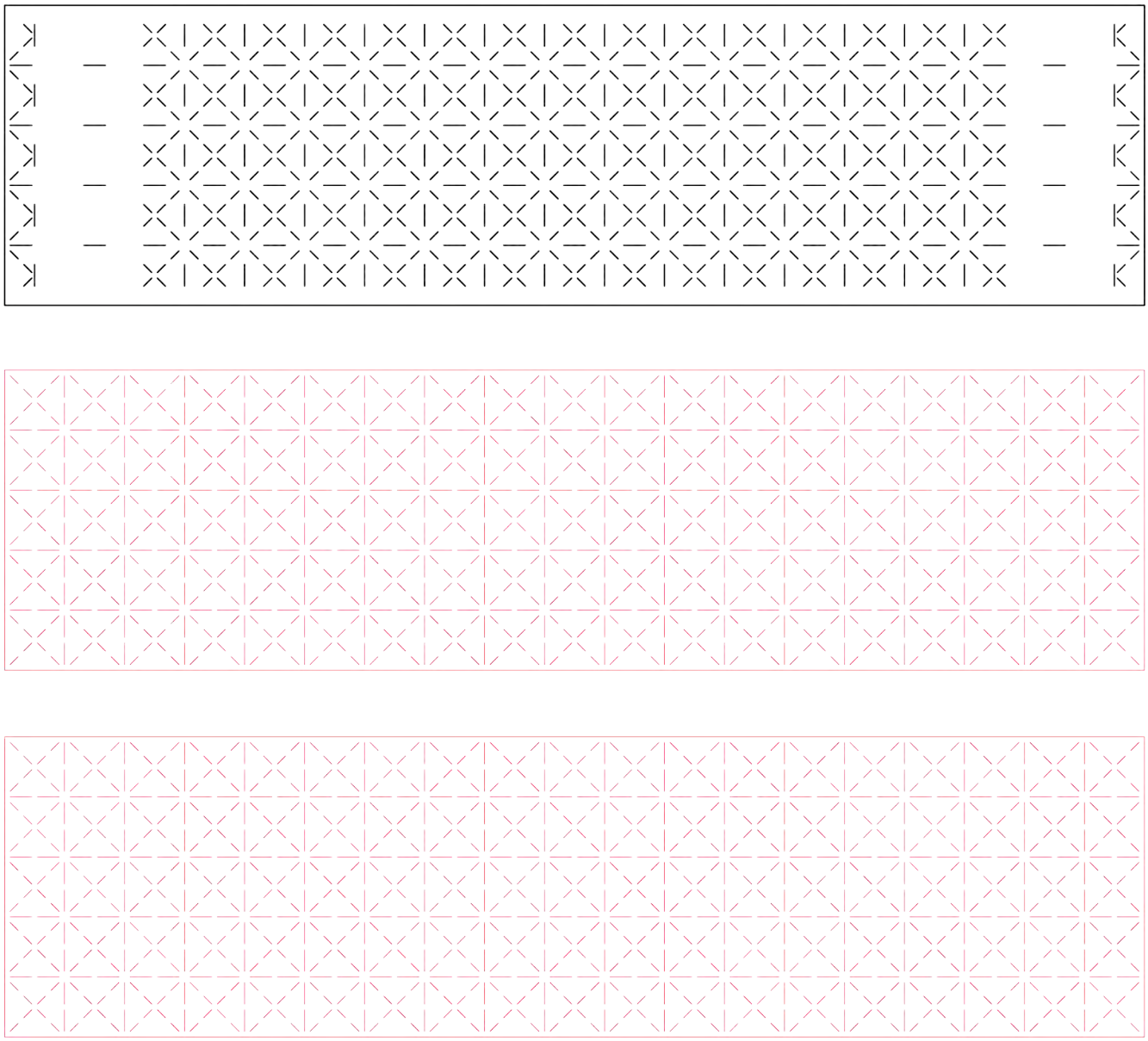
A2.20: CAD drawings testing interlocking seat webbing using HDPE milk bottles.



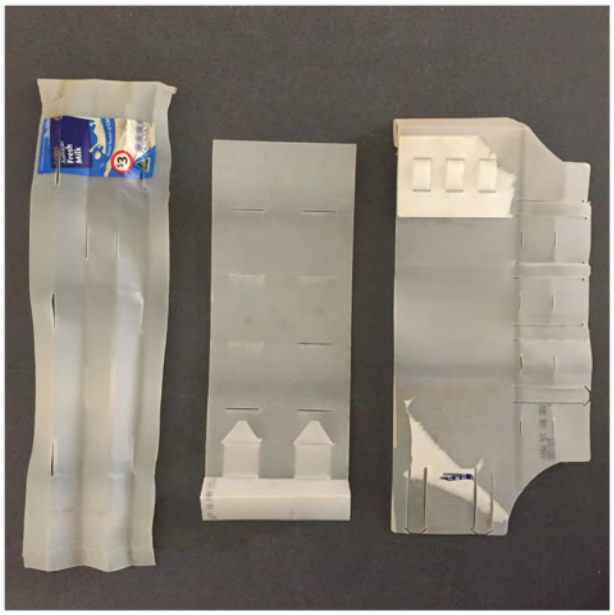
A2.21: CAD drawings testing interlocking seat webbing using HDPE milk bottles.



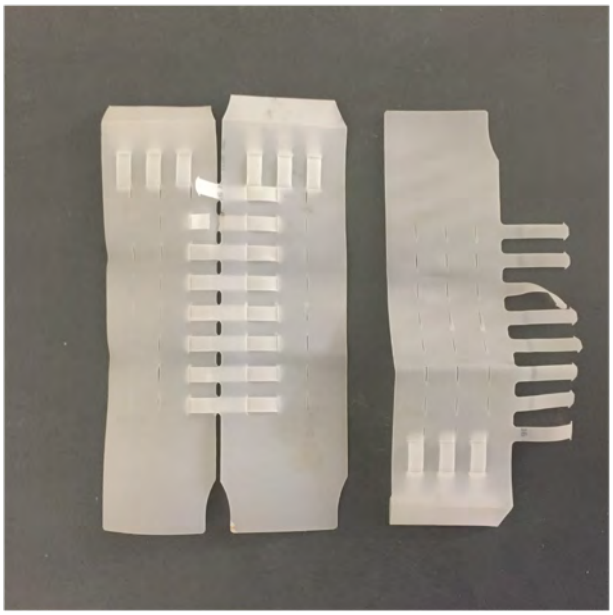
A2.22: CAD drawings testing interlocking seat webbing using HDPE milk bottles.



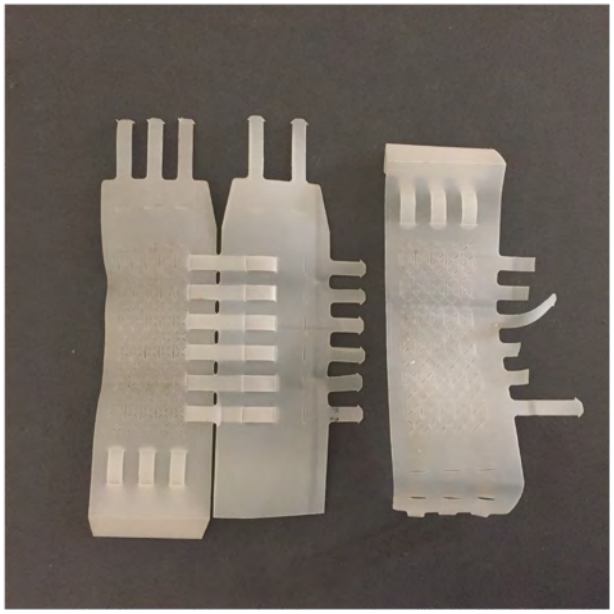
A2.23: CAD drawings testing folded seat webbing using HDPE milk bottles.



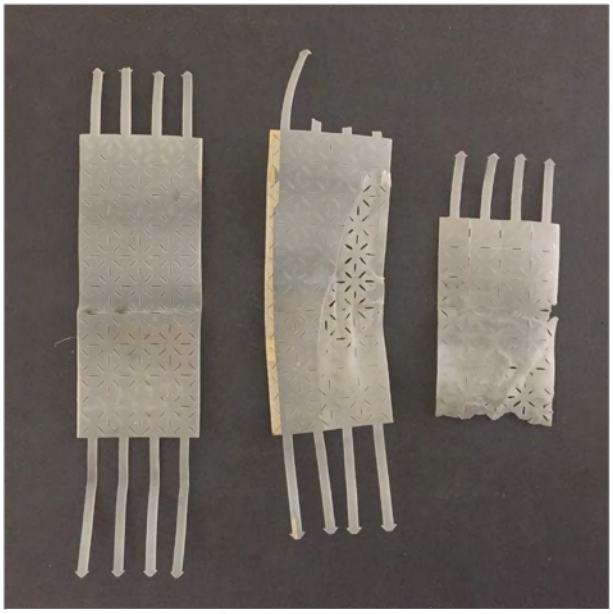
A2.24: Laser cut material tests.



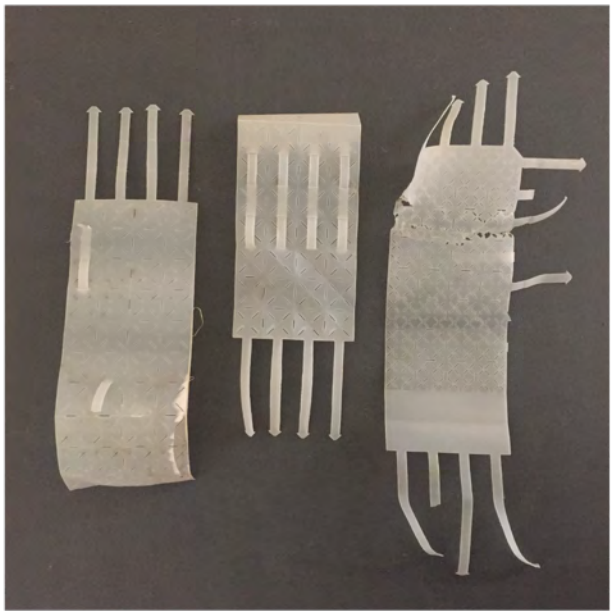
A2.25: Laser cut material tests.



A2.26: Laser cut material tests.

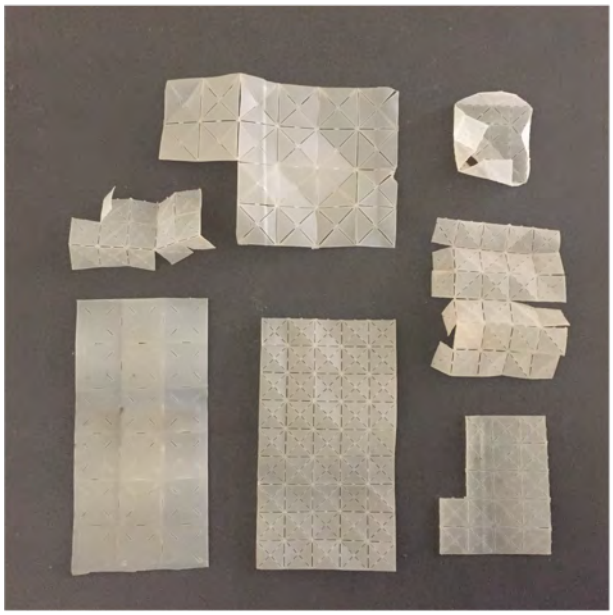


A2.27: Laser cut material tests.

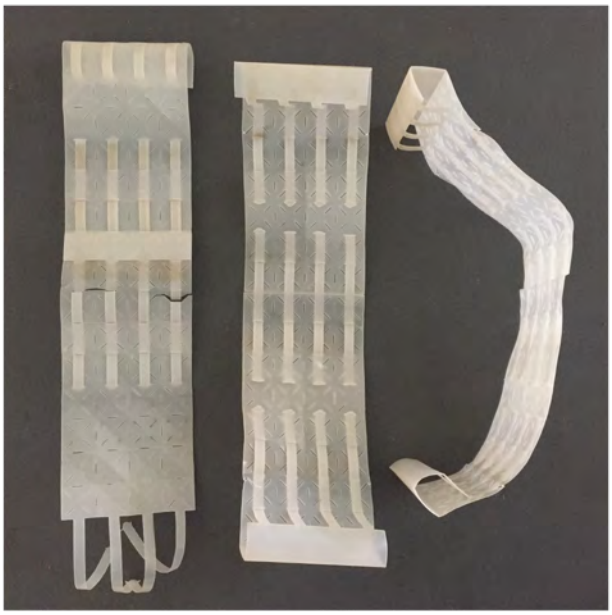


A2.28: Laser cut material tests.

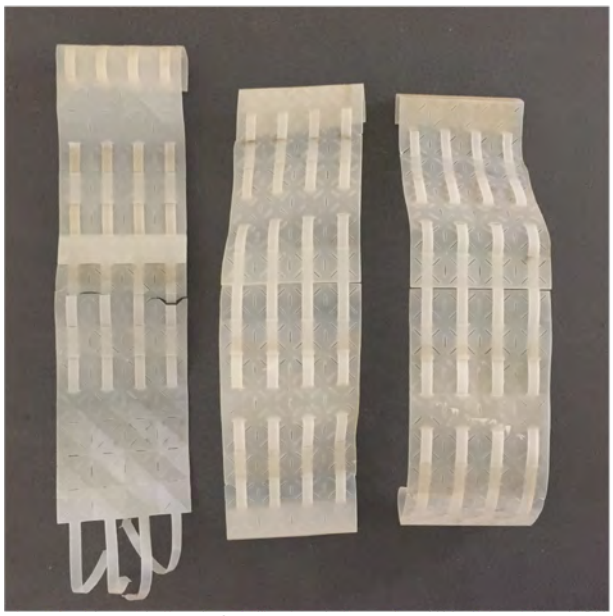
A2.29: Laser cut material tests.



A2.30: Laser cut material tests.

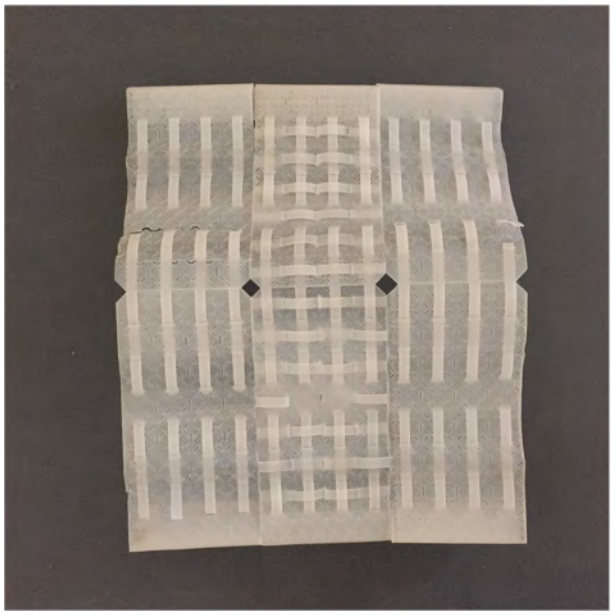


A2.31: Laser cut material tests.

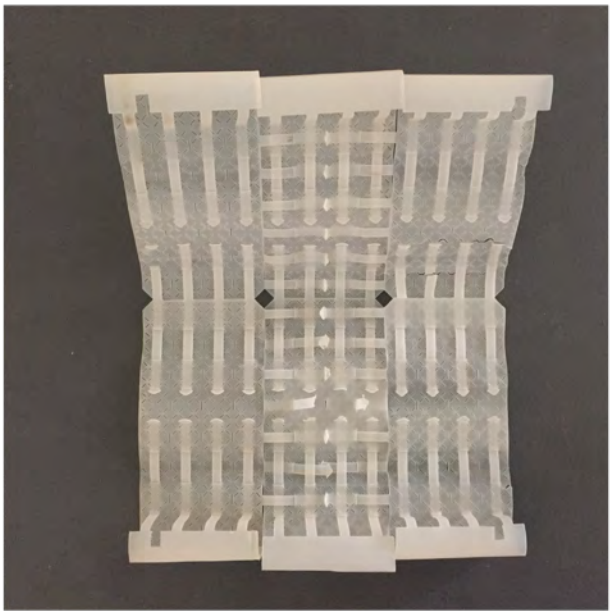


A2.32: Laser cut material tests.

A2.33: Laser cut material tests.



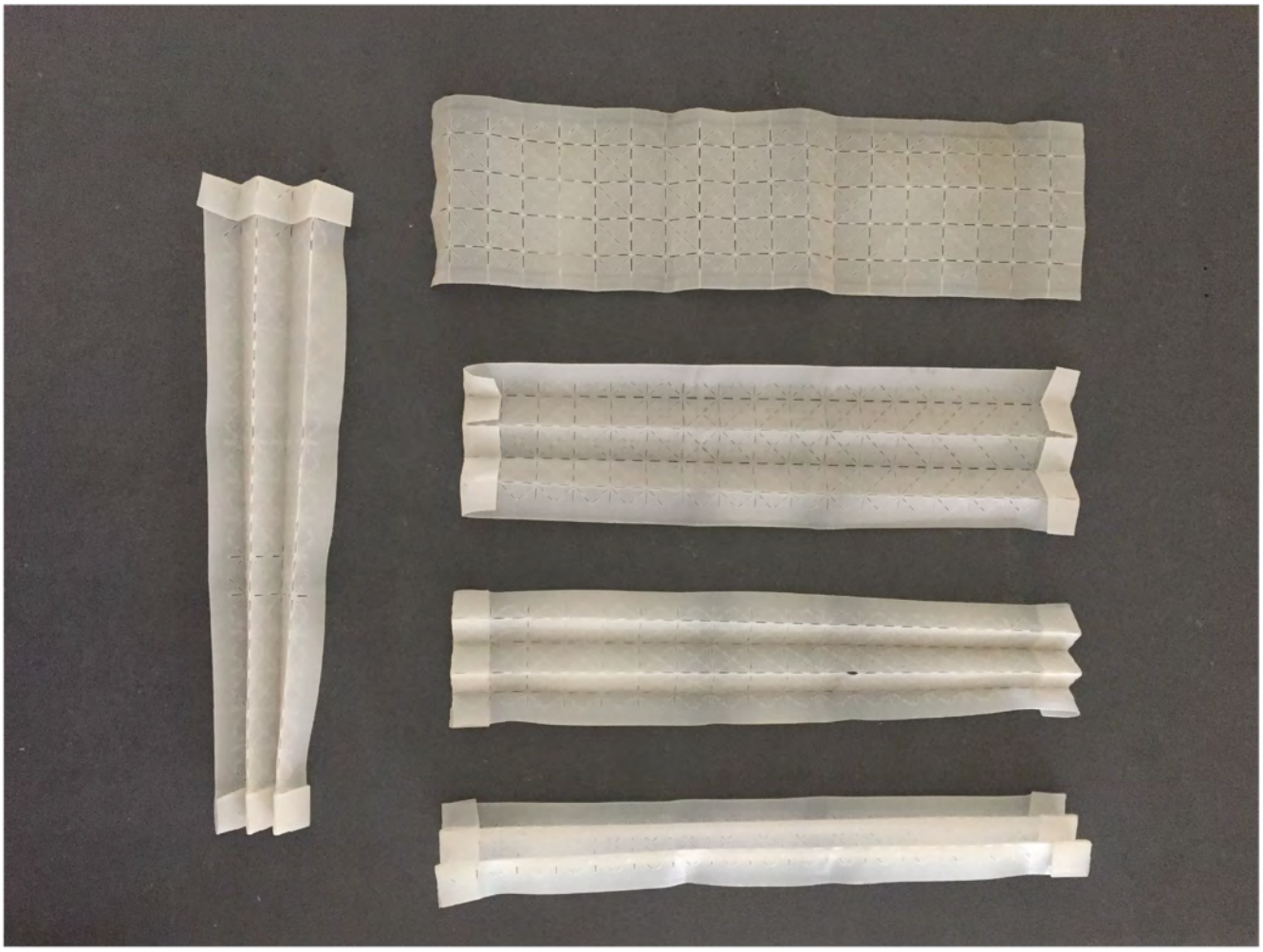
A2.34: Laser cut material tests.



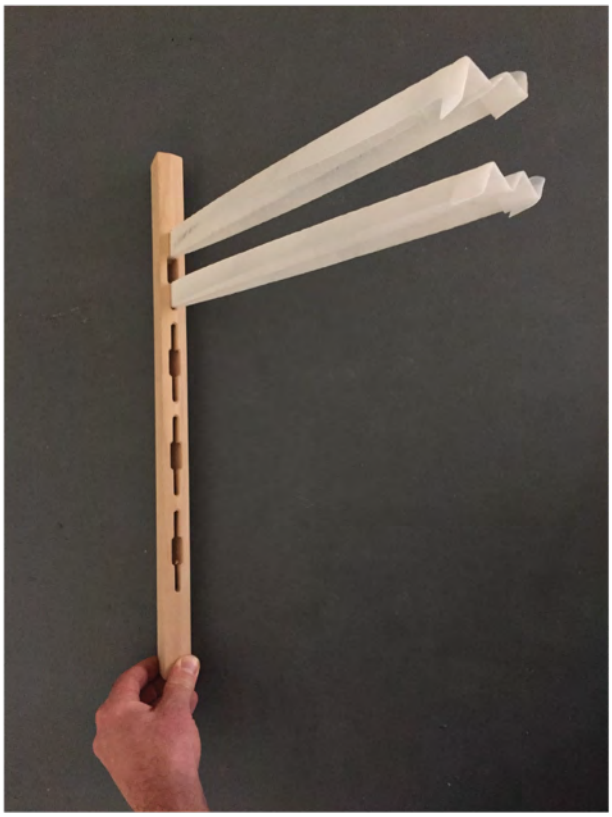
A2.35: Laser cut material tests.

A2.36: Laser cut material tests.

A2.37: Laser cut material tests.



A2.38: Final folded laser cut seat webbing.



A2.39: Final folded laser cut seat webbing inserted into frame.

A2.40: Final folded laser cut seat webbing inserted into frame.

A2.41: Final folded laser cut seat webbing inserted into frame (underside detail).

A2.42: Dissassembled stool components.

A2.43: Dissassembled stool components.

Statement

I am currently undertaking practice-led PhD research and this has caused a complete re-evaluation of my understanding of 'design.' I am beginning to recognise that design as a process and way of thinking can be applied to anything, at anytime, in any given situation and with any medium, capable of affecting everybody. Design is about intent and is a very powerful tool. Considering that everything that exists within the built and digital environments is an act of design, designers therefore have a great deal of responsibility and must try to understand every implication of their decisions when bringing something tangible or non-tangible into the world. Social, cultural, ethical, historical, environmental, technological and even emotional layers are now all equally important parts that make up the complexities of the process of design, of 'responsible design'. This is a hard thing to comprehend and represent in a furniture practice.

This work is therefore strictly an experiment and a prototype aimed at generating conversation - it may succeed or fail. I'm making a stool, not because I think the world needs another one, but rather as a means to explore and test thinking and research via a physical and familiar form. Chairs are a technical, structural and ergonomic challenge and due to their long-standing place in history, hold the ability to offer more than just pure function. Donald Judd said "A work of art exists as itself; a chair exists as a chair itself. And the ideas of a chair isn't a chair" [1]. This new work is exactly that, a representation of an attempt to shift design focus and take a different direction. This is a course that I am finding not that easy to navigate – it is uncertain and uncomfortable.

This stool prototype comprises two seemingly contradictory materials – wood and plastic. The seat is a series of interlocked sheets made by laser cutting flattened out used HDPE milk bottles. HPDE has turned out to be a strong and malleable material, capable of being manipulated into many forms. The understructure utilizes a combination of experimental 'dry joints' from Victorian Ash, reclaimed from a discarded bed head. The point of making this chair is to try and combine several modes of thinking. The notion of looking at design from a different perspective - at the end – and working in reverse to raise important questions about impact, appropriateness, methods, processes and design; the promotion of high-level practical skill and craftsmanship and the importance this plays (and will continue to play) in the role of design; and the utilization of what would otherwise be classified as waste.

Ultimately and put simply, my research is based on the pursuit of a 'better' practice and to generate ideas that may add something relevant to the conversation - to contribute positively and meaningfully to our material culture, not take away from it.

Niklavs Rubenis
June 2014

[1] "Donald Judd," Judd Foundation, accessed January 30, 2014, http://www.juddfoundation.org/furniture/judd-furniture

A2.44: Stool Prototype #4 (exhibition image).
Image courtesy Craft ACT: Craft & Design centre.

A2.45: Stool Prototype #4 (exhibition image).
Image courtesy Craft ACT: Craft & Design centre.

A2.46: Stool Prototype #4 (exhibition image).
Image courtesy Craft ACT: Craft & Design centre.

A2.47: Stool Prototype #4 (exhibition image).
Image courtesy Craft ACT: Craft & Design centre.

3. PROCESS: CLOUD LIGHTING INSTALLATION

A3.1: Cloud lighting installation.
Image by Mark Nolan, Chalk Studio (courtesy Museum of Australian Democracy).

Project Overview
Cloud is a concept lighting installation commissioned by the Museum of Australian Democracy (MoAD), Old Parliament House, Canberra, Australia. It was displayed as part of the exhibition "Bespoke: Design for the People". MoAD provided a project brief, which, applicable to threads running throughout this project, had a by-line of, "The emphasis will be on design". Cloud is a site-specific work suspended from the ceiling of what was originally the office suite for the Leader of the Government in the Senate.

In this time of increased environmental awareness clouded by growing waste concerns, politics and design both play a role in influencing and shaping the world. Cloud suggests that waste, as a product of design, needs be more tightly governed, regulated and monitored—this is a matter of politics.

To further heighten the experience of being confronted with 'illuminated waste' situated in a room and building that stands for power, an existing clock that manically ticked on the wall was also amplified. The objective was to draw attention to time and propose if we are really open to change, then time is against all of us. The idea was also to highlight other elements in the room and to take some focus away from the suspended object, acknowledging that the work is sitting within a broader context.

Details
Name: Cloud.
Year: 2014.
Materials: Laser cut HDPE from 80 discarded milk bottles, reused mono filament and LED.
Dimensions: 2000 x 900 x 400 mm.

Exhibited as part of:
Bespoke: Design for the People (Museum of Australian Democracy, Old Parliament House Canberra, Australia), November 2014 - October 2015.

Exhibition Expression of Interest, August 2014

1. DESCRIPTION OF PRACTICE
I am involved with 'design,' specifically that of designing and making furniture. Although my practice is a culmination of training and experiences informed by professionally working across many aspects of the furniture industry, design and education sectors, I am currently going through a complete re-evaluation of my understanding of 'design' and how it can affect us all, every minute of every day.

Design is not a mutually exclusive process. The fundamentals of design are transferable to any discipline and provide tools and a way of thinking that is universal - design can be applied to anything at anytime. Everything around us, particularly the built environment and objects we use, and the often-resulting waste, has been an act of design by someone or groups of people. Design can therefore be defined as the physical act of intentionally doing something. In essence we are all 'designers' – we think and we make decisions that impact on other people, the environment and ourselves. It is arguably one of the most powerful tools we have.

Simply put, my practice has become increasingly focused on being more 'aware'. Recently I have begun to shift design focus and take a different direction. I am trying to understand the implications and responsibilities of designers and how design is made up of many complex layers such as social, cultural, ethical, historical, environmental, technological and even emotional components. These elements must also be fused with a high level of practical skill. In a time when Australian training organisations and universities have been de-funded and programs compressed, online training is replacing traditional face to face contact, automation continues to exponentially expand within industry and the ever increasing loss of manufacturing off-shore, skill and 'design' will have to become more important, particularly if a population, albeit a country, is to have some type of 'sustainable' future. I have become increasingly aware that 'design' is also highly political and can be a mechanism or agent for change. Design can be used to ask questions and promote discussion - it is not a profession of just producing pretty things.

As a result, I am finding that this new way of thinking and design course not that easy to navigate – it is uncertain, uncomfortable and requires the shedding of all previous preconceptions and expectations. A recent example of this approach and thinking in a physical form is the experiment “Chair Prototype #4 (this is just a concept; this is just a starting point)” that is currently on show in the exhibition “Embracing Innovation: Volume 4” at Craft ACT: Craft & Design Centre. The aim of making this chair is an attempt to combine several modes of thinking – the notion of looking at design from a different perspective and working in reverse to raise the important questions about impact, appropriateness, methods, process and design; the promotion of high-level practical skill and craftsmanship and the importance this plays (and will continue to play) in the role of design, and the utilisation of what would otherwise be classified as waste, particularly that of utilising all-ready-existing resources such as used HDPE milk bottles. My proposal for the exhibition “Suites, Seats and Suits: Fine Furniture of Provisional Parliament House” will be a continuation of this exploration and experimentation.

2. OVERVIEW OF PROPOSED RESEARCH

I am proposing a site-specific work, a series of plastic ‘clouds’ suspended from above in room M25d, originally the office suite for the Leader of the Government in the Senate. Hanging over the public area (as defined by the barrier) and the hexagonal table in the centre of the room, each ‘cloud’ will be a sequence of stitched laser cut and manipulated re-used HDPE milk bottle panels (please refer to left hand image on page 4 of my attached portfolio and CV). Taking inspiration from Grace Tan’s 2013 Singapore Art Museum installation ‘Refuge’ and the beautifully ephemeral clouds produced by Dutch artist Berndnaut Smilde (although completely different in their composition and materials), these proposed forms will be hung at random above head height and dimly illuminated from within. They essentially will be ‘wasted lights’.

In his 1992 paper ‘The Role of the Leader of the Government in the Senate’, Senator John Button writes about the role and responsibilities of leadership, “In a sense, the Senate leader is the person with whom the buck stops …”. The hangover from the implications of important decision-making still lingers within the walls of M25d. Perhaps because the room is quiet, dark and offers no natural light due to the closed shutters; this space also forces the feeling to be inward and reflective. To further heighten the experience of being confronted with ‘illuminated waste’ situated in a room and building that stands for power, I am also proposing to amplify the clock that ticks on the wall. The intention is to highlight time - if we are really open to change, then time is against us.

3. RATIONALE OF PROPOSED ARTWORK

In ‘Design Futuring: Sustainability, Ethics and New Practice’, Tony Fry opens with “… it can no longer be assumed that we, en masse, have a future … Effectively, what we have done, as a result of the perspectival limitations of our human centeredness, is to treat the planet as an infinite resource at our disposal”. This is THE result of ‘design’. For too long ‘design’ has been a slave to fashion and trends, a large contributor to frenzied consumerism, a drain on non-renewable resources and a backer to what design philosopher Victor Papanek would have called “new species of permanent garbage”.

In a time of increased environmental awareness and ‘sustainability’, waste still continues to grow. In 2010 the Australian Bureau of Statistics reported that between 2006-2007 a 12% increase in landfill waste was recorded. In 2007 the Economist published an article titled ‘The Truth About Recycling’, ending with the comment “waste is really a design flaw”. This means ‘design’ on all levels potentially needs to be more tightly governed, regulated and monitored – it is by nature a political matter.

This proposed work is not meant to be a hard-edged political statement; it is to be an offering of thinking and an alternative use of materials. The intent is to provide a point of view through a physical representation - a form that is driven by intent, meaning and symbolism – just like the hexagonal table below.

4. NOTE

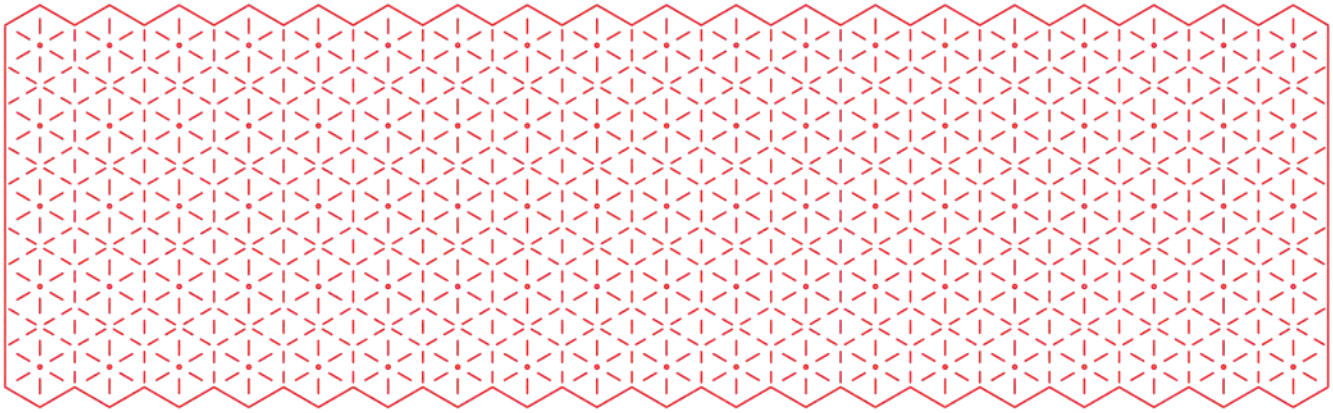
This work will be made from a series of laser cut HDPE panels stitched together to create ‘clouds’. The idea is to have these forms suspended from the existing lighting grills that are fixed to the ceiling directly above. This work will be very lightweight constructed from 0.2mm HDPE plastic, LED strip lighting and mono filament. I have spent time in M25d, documented the space, paid attention to both heritage guidelines and overhead fire detectors and sprinklers and have checked with MOAD about the feasibility of this project. In theory it is possible, however if selected, the work will obviously need to be approved before commencement of fabrication or installation.

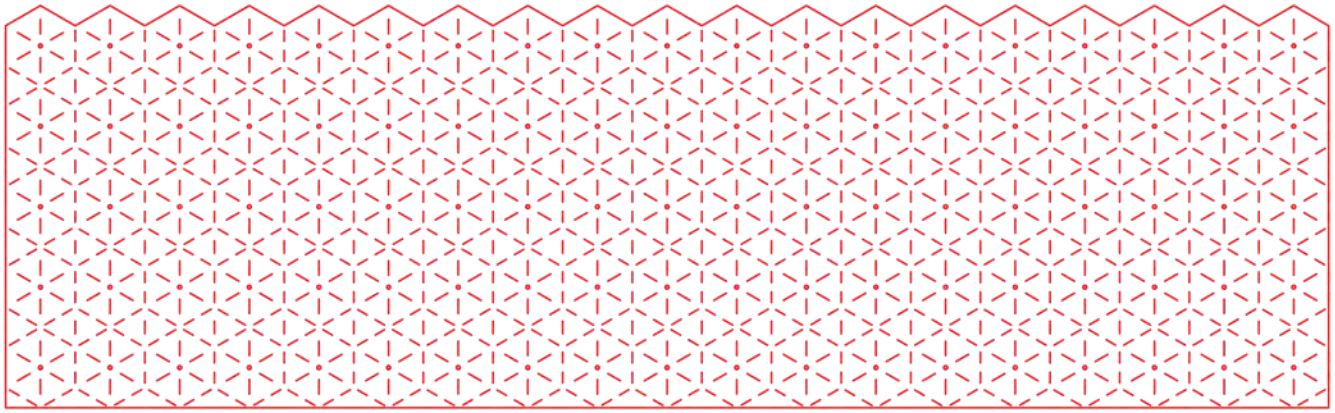
Niklavs Rubenis
August 2014

A3.2: CAD drawing for laser cut pattern tests.

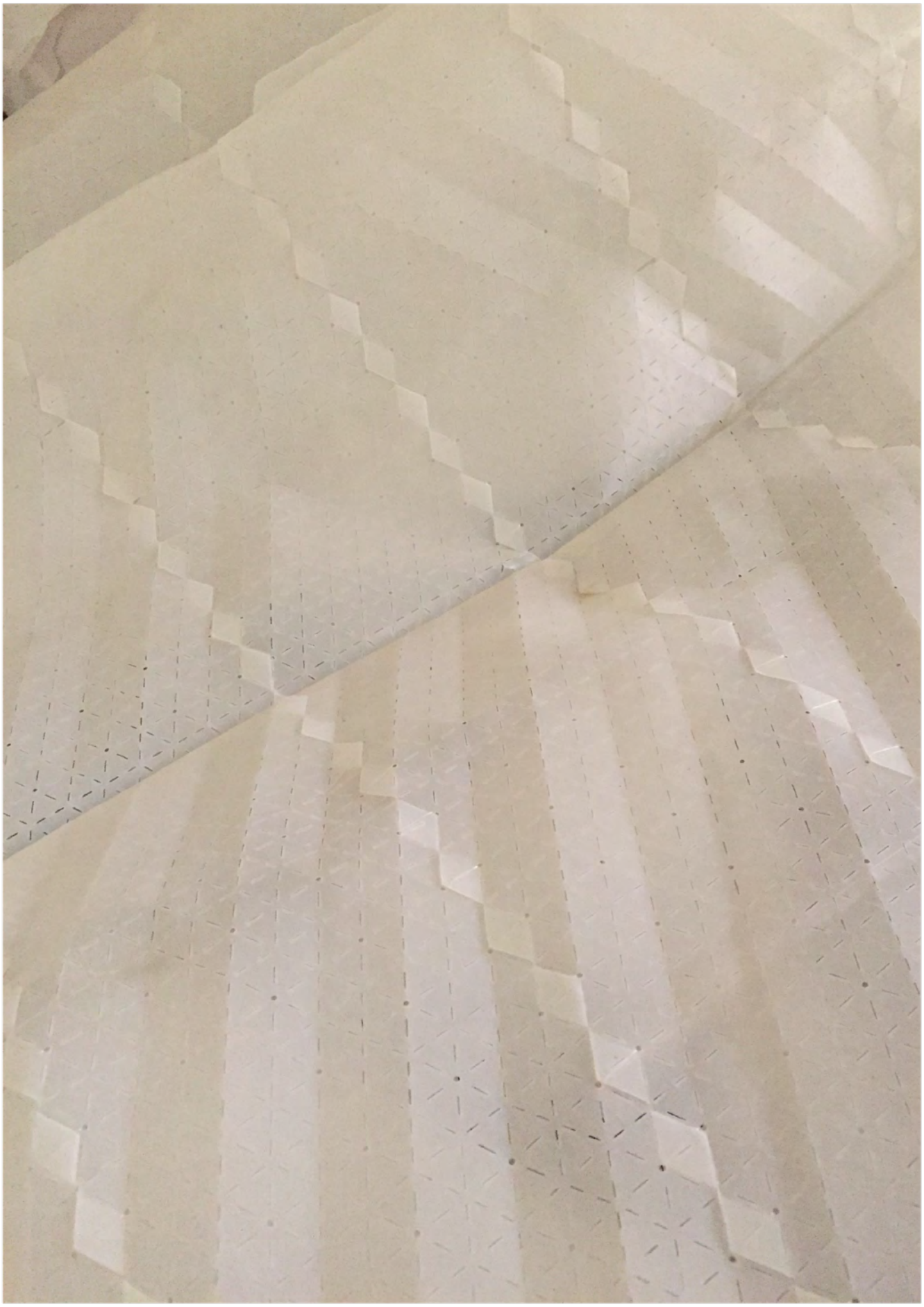
A3.3: Workshop mockups.

A3.4: Mockups.
Image by Halie Rubenis.

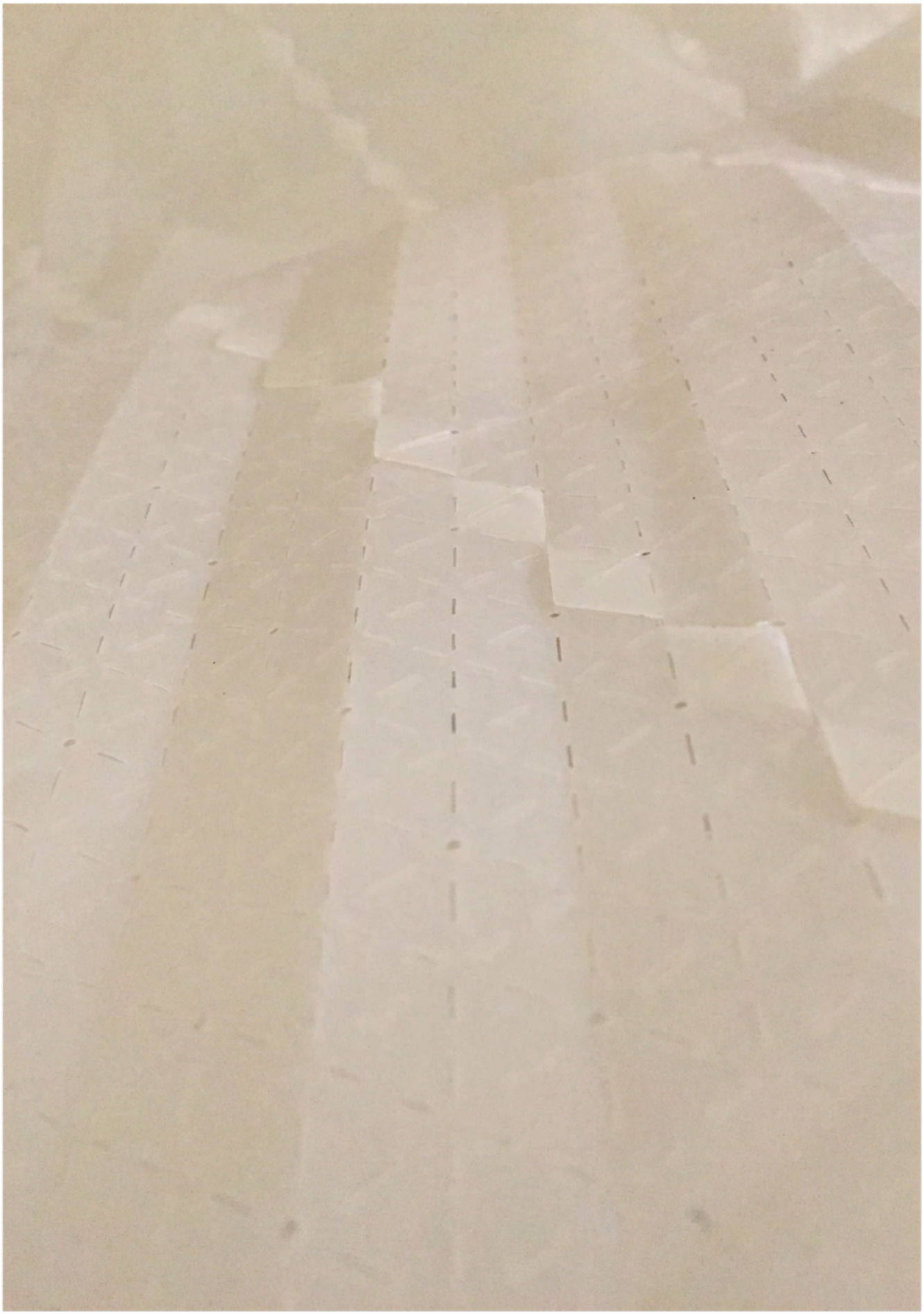




Above: A3.5: Laser cutting milk bottles.
Below: A3.6: Laser cutting pattern for middle and end panels.



A3.7: Detail of stitched panels.



A3.8: Detail of stitched panels.

A3.9: Building and testing in the workshop.

Bespoke

Niklavs Rubenis

Clouds, 2014

re-purposed plastic packaging, monofilament

Politics and 'design' are related; both are mechanisms that shape the world. Whether we care for either of these two fields, they influence us every day. Waste, a by-product of design, is also a member of this family and impacts heavily on our built and natural environment.

I can only imagine what type of debates took place around the hexagonal table that stands in the office of the Leader of the Government in the Senate.

Potentially designed as a symbol of the — then — six states, this table no doubt bore witness to influential decisions regarding the shape of things to come, of change. My work, hanging above the table, refers to three forces — politics, design and waste — and symbolises how they all need to be 'in the same room' if we are to become more 'sustainable', to change. But, like everything, time is against us ...

Niklavs Rubenis has been employed in many areas of the furniture and design sectors. He is currently a lecturer at the Australian National University (Furniture Workshop, ANU School of Art) and divides his time between teaching, PhD research and practice.

A3.10: Exhibition statement (scanned).

Above: A3.11: Cloud lighting installation with amplified clock on the wall.
Below: A3.12: Cloud lighting installation (detail).

4. PROCESS: CRAFTING WASTE

A4.1: Crafting Waste.
Image by Saini Copp.

Project Overview
Crafting Waste, a solo exhibition at Craft ACT: Craft & Design Centre that was supported by Rolfe Classic BMW, is a body of work that provides a firmer foundation for re-evaluating SBCD. This exhibition was an opportunity to build a cohesive body of work that engaged in the re-making of existing objects that have lost perceived value. It was also a chance to work on the critical spectrum of design and to use the objects as vehicles for addressing other pertinent concerns, such as waste.

The idea of the exhibition was to create a domestic setting, a 'lounge room' of sorts. Most of the materials or objects reused or repaired in the exhibition are a by-product of domesticity so it seemed logical to re-imagine this setting considering our living spaces have now become the site for globalised consumption and resulting waste. For the exhibition this included standard recognisable furniture items: a bench seat, side table, lighting and ottomans. A short film, focusing on process and the motivating factors behind the exhibition, played on a television set providing a central focus for the arrangement of the work.

Details
Name: Crafting Waste (solo exhibition).
Year: 2016.

LL Bench Seat, 2016.
Materials: Re-used found materials and objects; existing metal frame, wood (various species), cord.
Dimensions: 2080 x 550 x 740 mm.

Side Table, 2016.
Materials: Re-used found materials and objects; existing metal frame, wood (various species), cord, electrical wire, rubber bands.
Dimensions: 930 x 450 x 520 mm.

The Stuff I think With, 2016.
Materials: Random found objects (rescued and found), material explorations.
Dimensions: Size varies.

Milk Bottle Light, 2016.
Materials: Re-used found materials and objects; tin can, HDPE (milk bottle), cardboard wood (various species), cord, existing light fittings, LED.
Dimensions: Size varies.

Ottoman 1&2, 2016.
Materials: Torn and worn clothes, re-used camping guy rope.
Dimensions: 450 dia x 280mm.

Orange Light, 2016.
Materials: Re-used found materials and objects; found object, HDPE (milk bottle), cardboard, wood (various species), cord, existing light fittings, LED.
Dimensions: Size varies.

Tin Can Light, 2016.
Materials: Re-used found materials and objects; tin can, HDPE (milk bottle), wood (various species), cord, existing light fittings, LED.
Dimensions: Size varies.

Crafting Waste Film, 2016.
Process.
Filmed and edited by Brett Lamb. Directed by Brett Lamb and Niklavs Rubenis.
4:52.

Exhibited as part of:
Crafting Waste (Craft ACT: Craft & Design Centre, Canberra, Australia), May 2016 - July 2016.
Supported by Rolfe Classic BMW.

Exhibition Expression of Interest, April 2015
Exhibition Application 2016 / Craft ACT: Craft and Design Centre

DESCRIPTION OF PRACTICE
Design is a transferable process. The fundamentals of design provide tools and a way of thinking that is universal – design can be applied to anything at anytime. Everything around us, particularly the built environment and the 'stuff' we use - and the often-resulting waste - has been an act of design. Design, therefore, can be a powerful mechanism, an influential force and a potential driver for change. Although still confused as simply a styling exercise, design is rather a highly complex process made from a combination of social, cultural, ethical, historical, environmental, technological, economic and even emotional layers. Waste, a by-product of design, is a factor in this equation, as is high-level practical skill, a basic yet often-overlooked important element. Sustainability, arguably the greatest challenge of the 21st Century, falls under this banner and is inextricably linked to design.

Over the last decade my practice has evolved through experiences informed by professionally working across many aspects of the furniture industry, design and education sectors. More recently through practice-led research, I have been re-evaluating a broader understanding of design and how this can be distilled and applied to the field of furniture. I am focusing on becoming more 'aware' and as a result have shifted focus and taken a new direction - one that extends beyond just the pursuit of aesthetics and function. My works have become physical experiments that use furniture as the test vehicle for ideas, acting as the mechanism through which to subscribe an ethical contribution to material culture.

To attempt to achieve this I have been applying several modes of thinking to the design and making of furniture. This has included:
o The notion of looking at design from a different perspective – at the end – and working in reverse to raise important questions about impact, appropriateness, methods, processes and design;
o The promotion of high-level practical skills and the importance this plays (and will continue to play) in the role of design;
o How tradition and craft sensibilities can be fused with manufacturing technology (computer numeric control and laser);
o And how the utilisation of ubiquitous commonplace throwaway 'stuff', material that would otherwise be generally classified as domestic waste, can be adapted, re-used or re-appropriated into objects of value.

Through the making of physical prototypes that act as case studies, my practice has grown into an exploration of process and materiality that offers a reflection of design, skills and the beginnings of an approach that gives value and meaning to objects through materials that have potentially been deemed to have none.

OUTLINE OF THE EXHIBITION
Aims & Objectives:
Sustainability has become one of the most highlighted and important current-day challenges. Despite having such a critical focal point, particularly within the field of design, it has been noted that resources continue to deplete and waste still continues to increase [1]. What actually defines a course of action is perhaps a factor in this as the term 'sustainability' is highly complex, although often abused through green wash-marketing campaigns imparting desensitization and lack of meaning. Exploring how sustainability actually fits within the context of a design and craft practice is an important area of exploration. To do this requires a revisit of fundamental principles.

Aside from a major environmental imperative, sustainability at a basic practical level calls for the return to local resource use. Considering we live in an interconnected globalised economy, a return seems obvious as a means of decelerating climate change by reducing environmental impacts such as carbon footprints and waste created by the transportation of goods. Employing regional resources also has the value of stimulating a local community and economy and in turn could create resilience from fluctuations or variations in global commodity prices or markets.

As resources continue to be increasingly under threat from mass exploitation, there is an opportunity to capitalise on increasing efficiency in methods and to employ the reuse of existing materials [2]. This almost subsistence perspective of making-do-with-what-exists offers another principal of sustainability, the attempt of 'slowing down' virgin resource use to reduce environmental impact.

To respond to this, the aim of this exhibition is to put-in-place the localism principle of sustainability by using readily accessible 'locally' sourced resources; materials taken directly from the waste stream that have been re-imagined into new objects manufactured with local industrial technology via a traditional craft skillset. The purpose of combining the intentional re-use of de-valued material is to focus on waste material as a useable commodity and how this can be integrated with a craft and design practice.

Solo/Group/Collaborative:
This proposal is for a solo exhibition.

Title & Theme:
The theme of this exhibition is largely an exploration of sustainability and how design is used as the mechanism in which to achieve this. The purpose of this work is an opportunity to experiment by attempting to turn de-valued resources into up-cycled commodities.

As yet I have not decided on a title, although I have compiled a list of key words that will help inform an appropriate exhibition name: Waste, skills, de-valued, commodity, craft, craft skills, bespoke, craftsmanship, traditional skill-set, design, sustainability, technology, manufacturing, affect, stories, localism, environment, sustainment, globalism, design-futuring, system-design, provenance, value, meaning.

Description of Types of Content:
The work proposed for this exhibition will be a body of furniture that encompasses lighting. The work will be arranged akin to a domestic lounge-room setting on the concrete floor of the Craft ACT gallery, defined by certain areas possibly abstractly marked non-permanently on the floor. There will also be lighting that will be suspended from the ceiling.

If this proposal is selected, I will make an assessment of the space with Craft ACT to determine an appropriate direction. I will supply any specialised mounts, plinths or fittings.

Estimated Area:
I am working within a 'lounge-room' setting, approximately 5/6m x 4/5m (20m2 – 30m2).

Special Considerations:
Power will be required.

OVERVIEW OF THE WORKS PROPOSED
These works will be exploratory furniture prototypes incorporating material rescued from the waste stream. The exhibition will feature furniture examples – coffee table, low chair, side table, lighting, etc – found in a common domestic setting. These pieces will not be market ready offerings nor fully resolved cultural commodities, rather physical exercises that attempt to reconcile an understanding of the complexities of sustainability and design by integrating discarded material into an individual craft-based furniture designer/maker practice. They will be experiments that act as drivers for discussion.

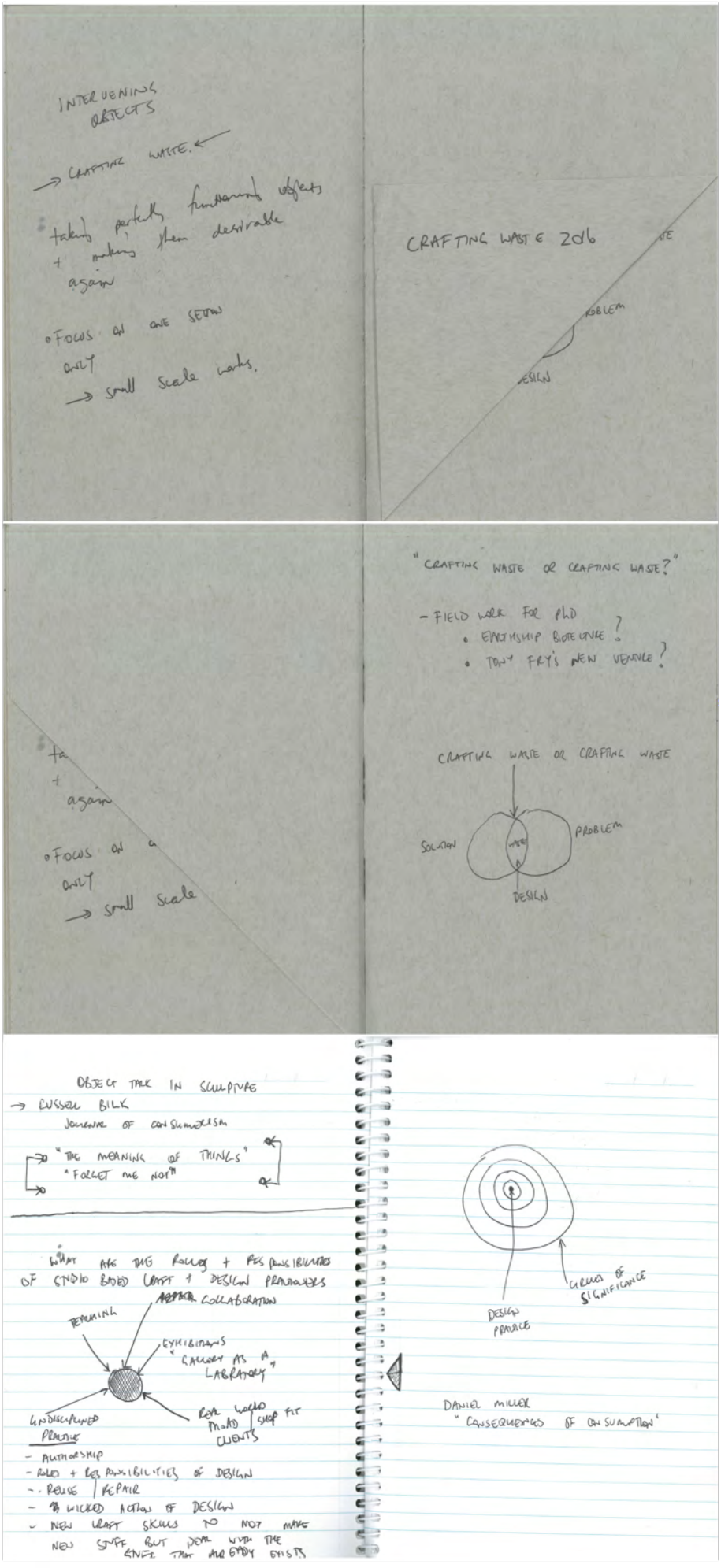
Two examples of similar work is Stool Prototype #4 (2014), a working four-legged stool structure combining reused timber and manipulated HDPE plastic from milk bottles. The second is: Cloud (2014), a conceptual lighting installation. Both studies represent a significant departure point from my previous practice of furniture making and represent the potential direction of this exhibition proposal.

FINANCIAL SUPPORT
! am currently supported and funded by an Australian Post-Graduate Award (APA).

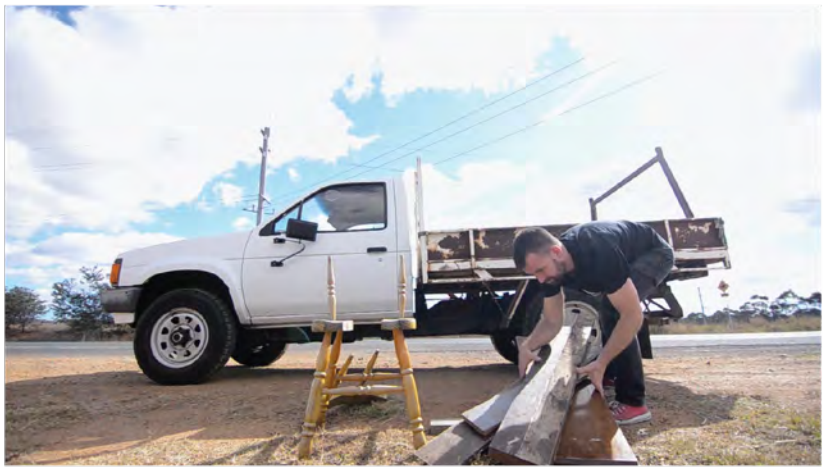
[1] During 2006-2007, Australians generated approximately 43.8 million tonne of waste. On average this is 2080 kilograms of waste per person. It has been estimated that only half of this total was recycled and from 2001 to 2007, a 12% increase in landfill waste was recorded.
Australian Bureau of Statistics, Waste Statistics, added 05/02/2010 http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4613.0Chapter40Jan+2010

[2] James Bradfield Moody and Bianca Nogrady. The Sixth Wave: How to Succeed in a Resource Limited World, Vintage Books, Sydney Australia 2010, pp.57-59

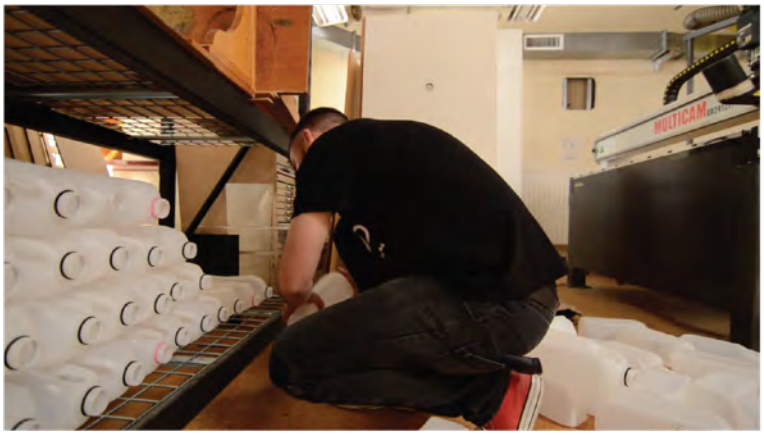
A4.2: Sketches (scanned).

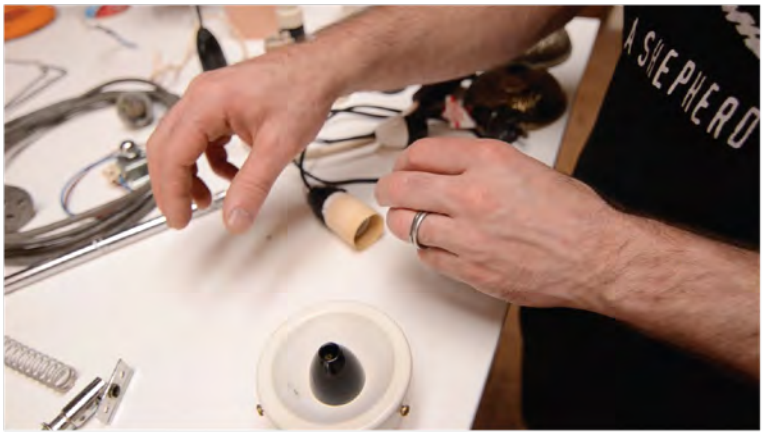


A4.3: Collecting materials.

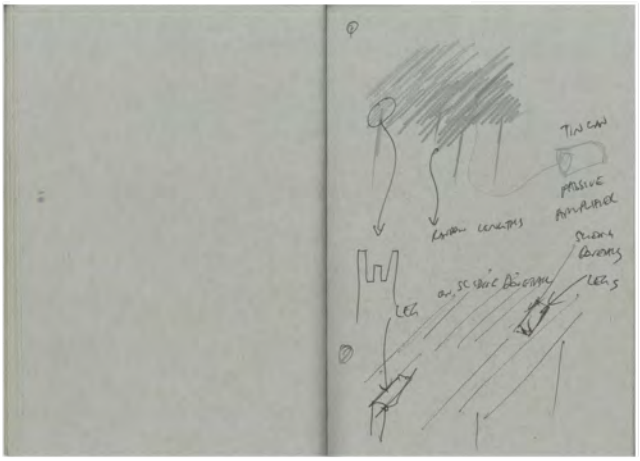


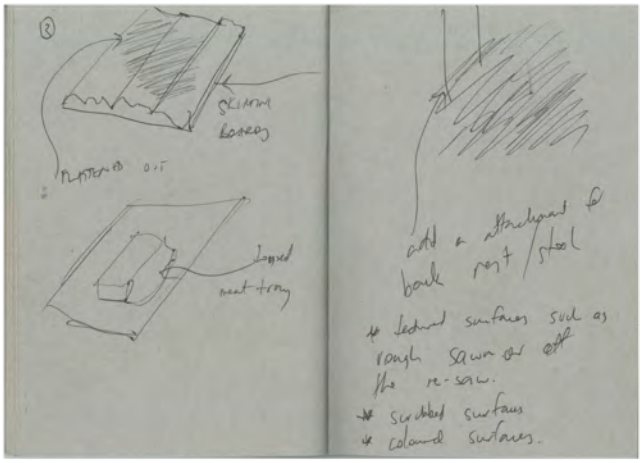
A4.4: Sorting materials and components.

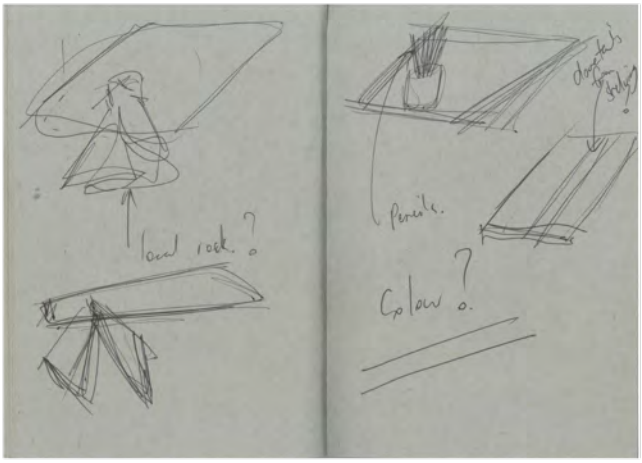


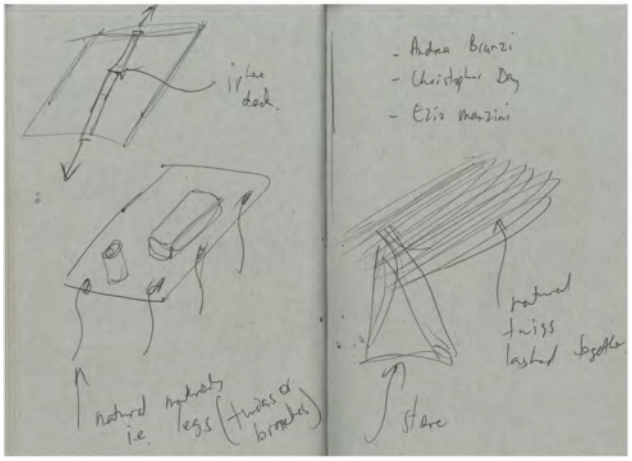


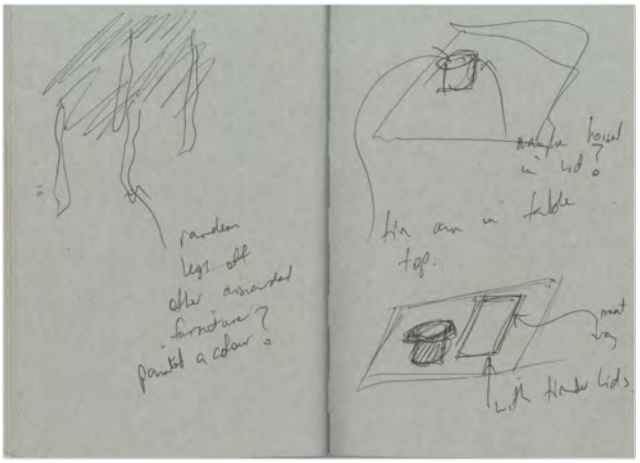
A4.5: Sketches (scanned).

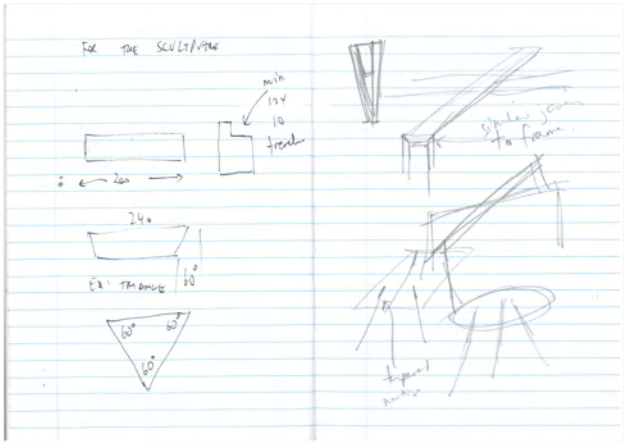


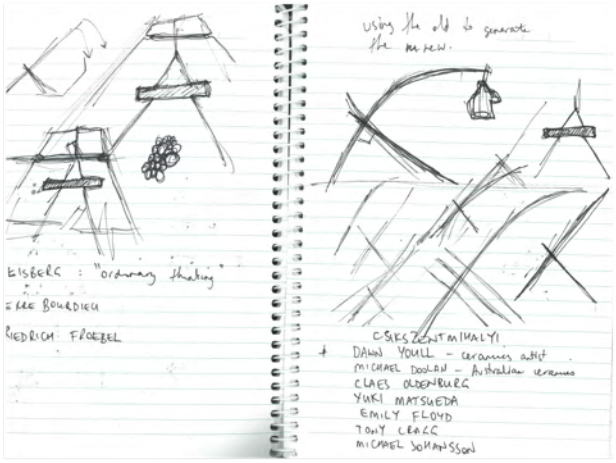


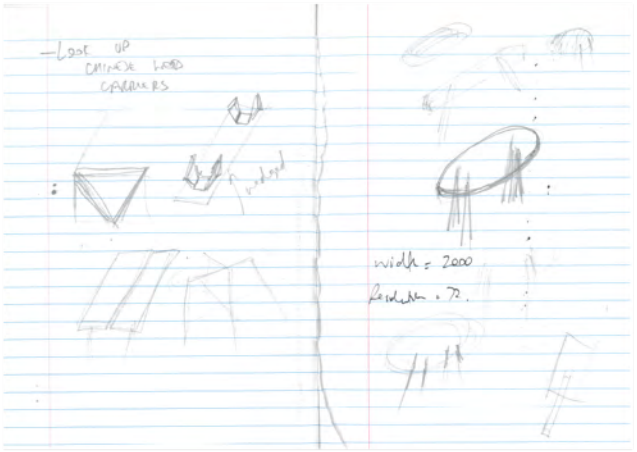


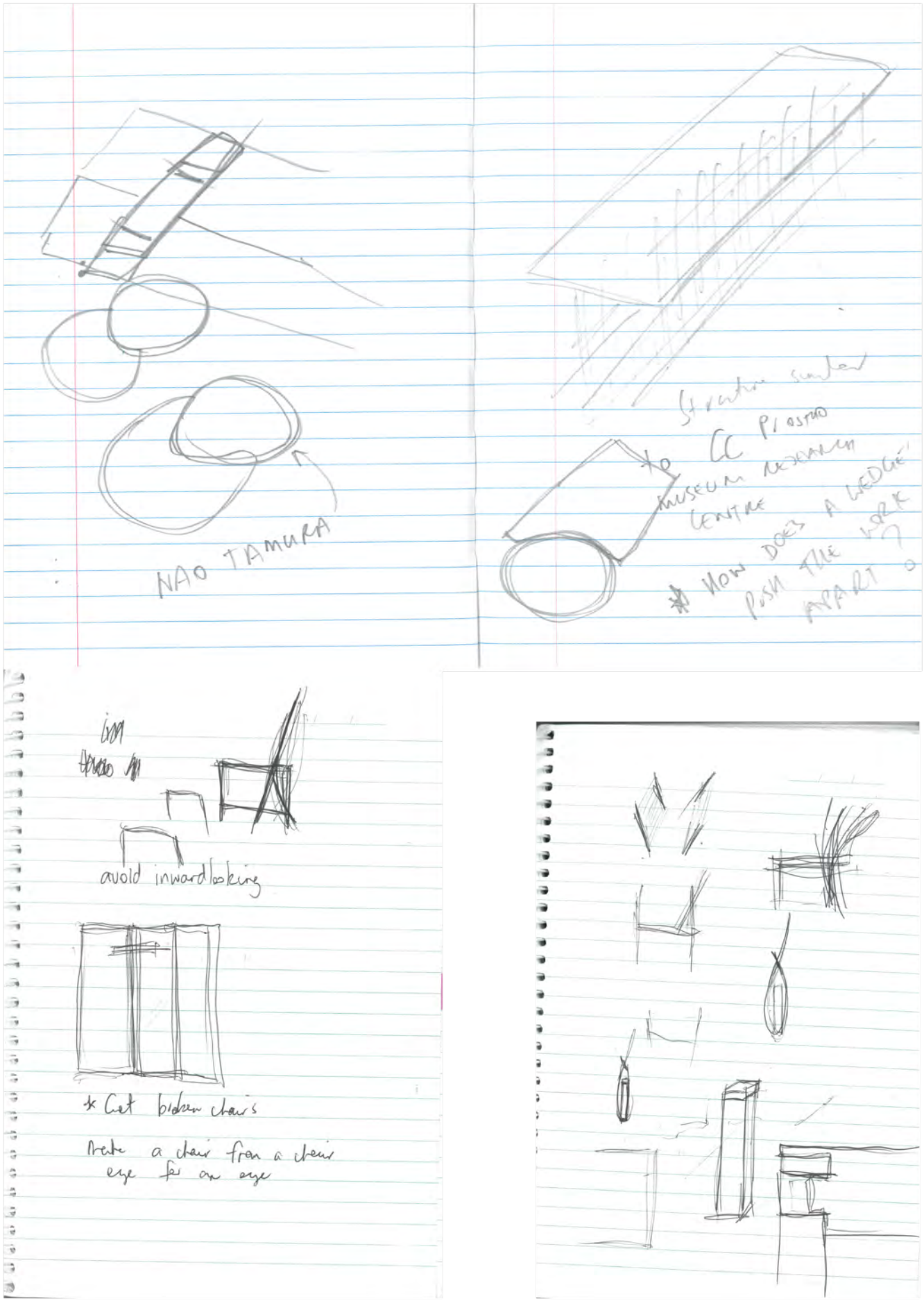




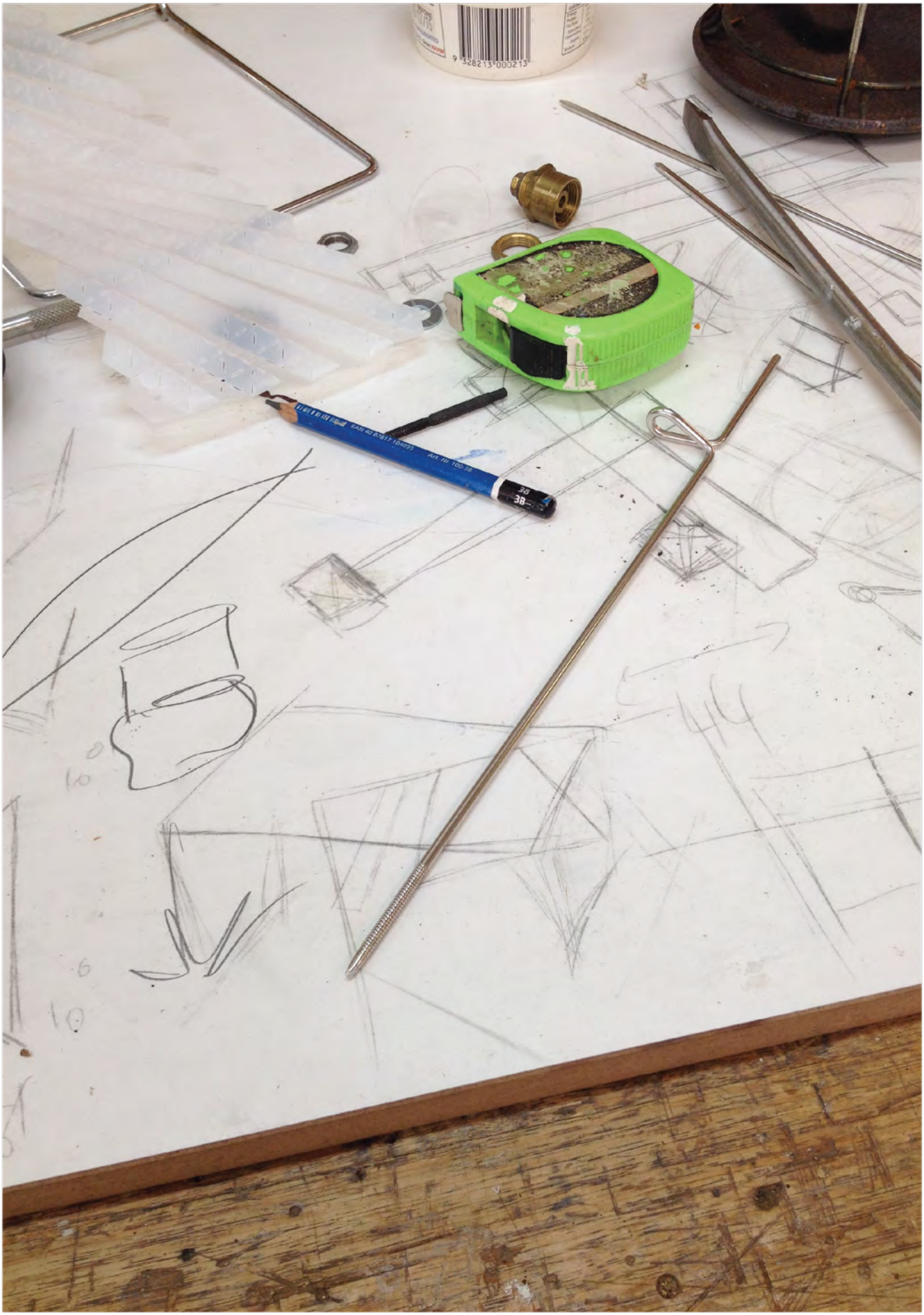




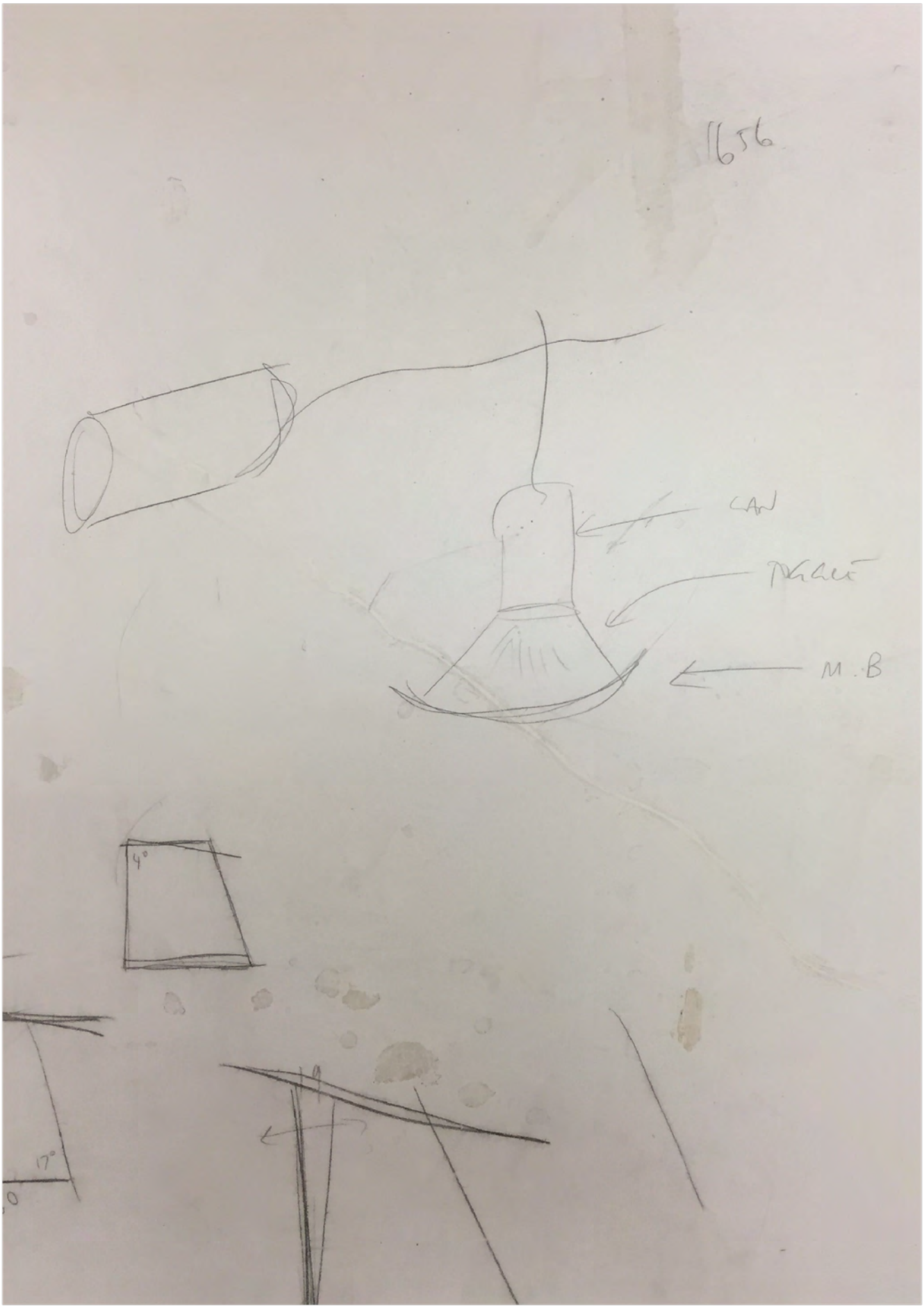




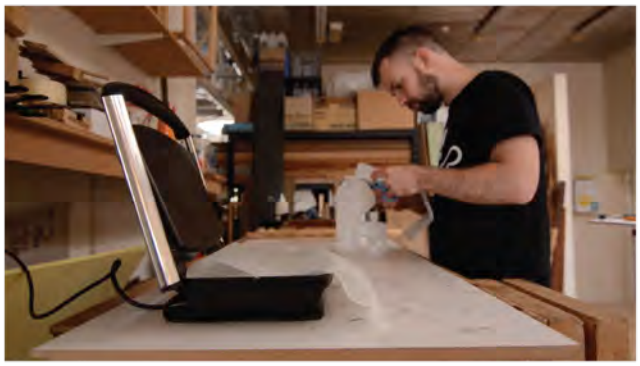
A4.6: Sketches (scanned).



A4.7: Sketches on workbench (photo).

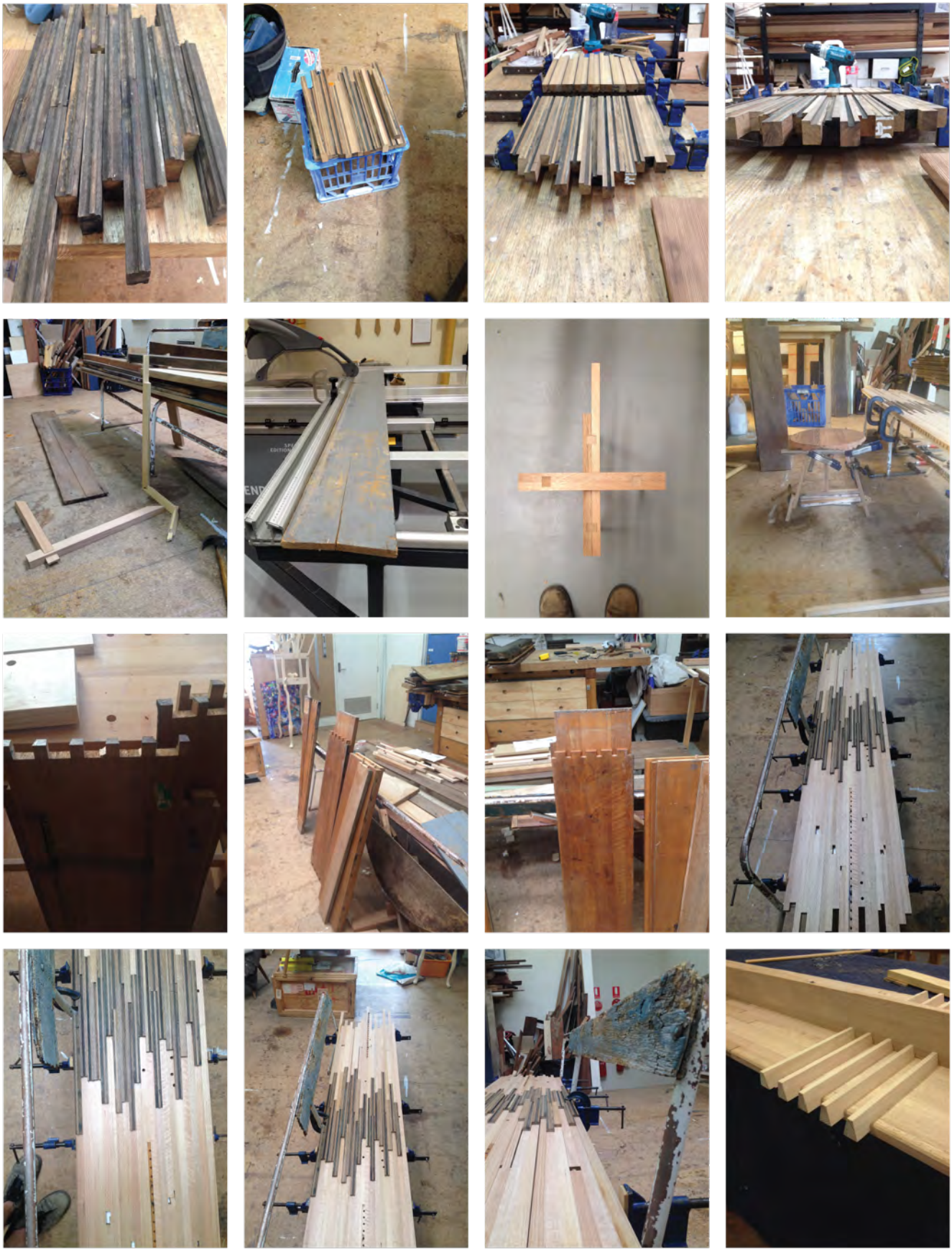


A4.8: Sketches on workbench (photo).

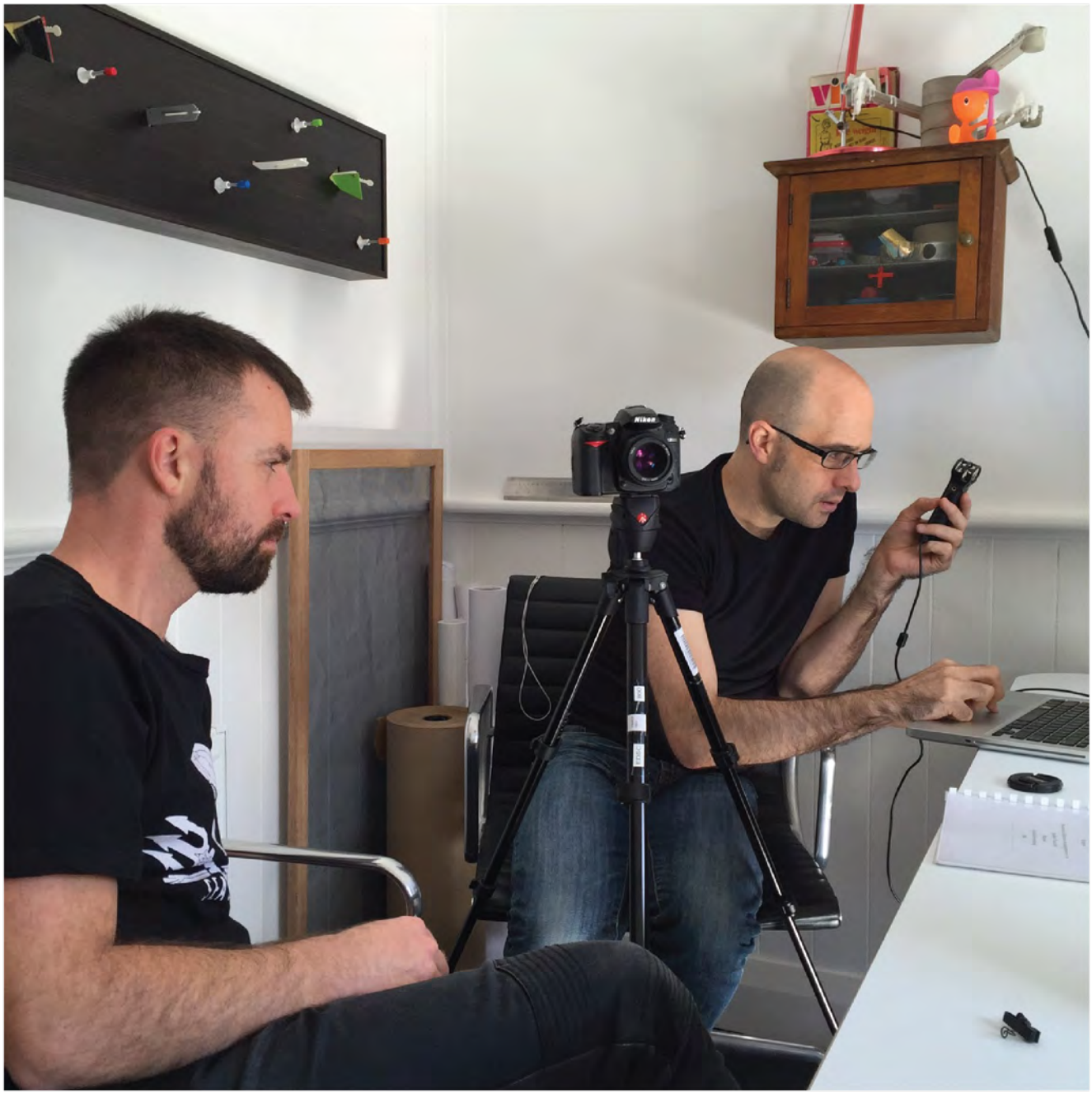


Above Left and Right: *A4.9: Cutting milk bottles and testing materials.*
Middle: *A4.10: Laser cutting milk bottles.*
Right: *A4.11: Laser cut pattern for tin can lights.*
Bottom: *A4.12: Folding laser cut milk bottles.*

A4.13: Processing materials and making for LL Bench Seat and Side Table.



A4.14: Process (workshop).



A4.15: Process (editing video footage with Brett Lamb).

Above: ***A4.16: LL Bench Seat (exhibition catalogue image).*** Image by Halie Rubenis.
Below: ***A4.17: LL Bench Seat (detail).***

craft & design centre

craft act

what

Gallery

Crafting Waste

Niklavs Rubenis

Through practice-led research, local designer/maker Niklavs Rubenis addresses contemporary critical concerns around design, consumption, material culture and waste. Rubenis' exhibition features propositional and prototype furniture and lighting crafted from de-valued resources. This exhibition is proudly supported by Rolfe Classic BMW.

Ro lfe Classic BM W

Aesthetics in the Time of Emergency

Sarah Field, Jennifer Ashley King, Jasmine Targett, Nadia Mercuri, and Bethany Wheeler

Primarily glass makers, each artist is exploring an idea surrounding a current 'state of emergency' that impacts the individual and society collectively such as nuclear disasters and climate change issues. By using combinations of craft, images and installations they bring these concerns to light. This exhibition is supported by NAVA.

Crucible Showcase

Mix and Match

Hsin-Yi Yang

Canberra Potters Society Craft ACT award winner Hsin-Yi Yang presents her interlocking ceramic objects with playful texture and colour that appeal to the child within.

who

You and your guests are invited to join Craft ACT: Craft + Design Centre at the official opening of the exhibition. The exhibitions will be opened by Dr Rohan Nichol, Head of Gold and Silversmith Workshop and Design Arts Coordinator, School of Art, Australian National University.

when

Opening event: Thursday 26 May, 6pm
Exhibitions run: 27 May to 9 July 2016
Where: Craft ACT: Craft + Design Centre Gallery

where

Craft ACT: Craft + Design Centre
Level 1, North Building, 180 London Circuit, Canberra City
02 6262 9333 www.craftact.org.au
Tuesday - Friday 10am - 5pm + Saturday 12pm - 4pm

contact

Media: Melissa Amaricai
02 6262 9333 or
communications@craftact.org.au

Curator: Mel George
mel.george@craftact.org.au

Image credits from left to right: Bethany Wheeler, Hazard Shadow fused glass, flame worked glass, fishing sinker, fishing float, porcelain Büchner funnel, Photographer Andrew Barcham. LL Bench Seat,Niklavs Rubenis, Found objects and materials. Photographer: Halie Rubenis.

Above and Middle: ***A4.18: Exhibition invite.***
Below: ***A4.19: Exhibition signage laser cut from discarded cardboard packaging.*** Image by Saini Copp.

Crafting Waste
Niklavs Rubenis (ACT)

1.
Milk Bottle Light
Re -used found materials and objects
Tin can, milk bottle (hdpe), cardboard, black cord, wood, existing light fittings, LED bulb
2016
$535

2.
Ottoman 1
Torn and worn clothes, guy rope
2016
$2600

3
Ottoman 2
Torn and worn clothes, guy rope
2016
$2600

4.
LL Bench Seat
Re -used found materials and objects
Existing metal frame, wood (various species), cord
2016
$6,6 50

5.
Side Table
Re -used found materials and objects
Existing metal frame, wood (various species), cord, electrical wire, rubber bands
2016
$960

6.
Orange Light
Re -used found materials and objects
Found object, milk bottle (hdpe), black cord, wood, existing light fittings, LED bulb
2016
$465

7.
Tin Can Light
Re -used found materials and objects
Tin can, milk bottle (hdpe), black cord, wood, existing light fittings, LED bulb
2016
$400

8.
Tin Can Light
Re -used found materials and objects
Tin can, milk bottle (hdpe), black cord, wood, existing light fittings, LED bulb
2016
$400

9.
Tin Can Light
Re -used found materials and objects
Tin can, milk bottle (hdpe), black cord, wood, existing light fittings, LED bulb
2016
$400

10.
Tin Can Light
Re -used found materials and objects
Tin can, milk bottle (hdpe), black cord, wood, existing light fittings, LED bulb
2016
$400

Exhibition runs from 26 May – 9 July 2016

craft act craft & design centre

Craft ACT: Craft and Design Centre
Gallery hours: Tuesday to Friday 10.am – 5.pm and Saturday 12.noon – 4.pm
Level 1, North Building, 180 London Circuit, Canberra City
02 6262 9333 www.craftact.org.au

Craft ACT: Craft and Design Centre is supported by the Visual Arts and Craft Strategy, an initiative of the Australian, State and Territory Governments ; the ACT Government and the Australia Council for the Arts , the Federal Government's arts funding and advisory body.

ACT Government
Australian Government | ACT Government
THE VISUAL ARTS AND CRAFT STRATEGY
Australian Government | Australia Council

A4.20: Exhibition room sheet.

Crafting Waste

Niklavs Rubenis

Milk cartons. Tin cans. Bench seats. Brilliant designs till no longer needed. Their brilliance is never questioned; their nonchalant presence in everyday lives is taken for granted. They become invisible when their one affordance disappears; they appear broken and as a result they become waste. But as wittily described by Mary Douglas broken things can be seen as 'unwanted bits of whatever it was they came from, hair or food or wrappings. This is the stage at which they are dangerous; their half identity still clings to them and the clarity of the scene in which they obtrude is impaired by their presence' (1966/2003, p.161). The scenery becomes a point of reference-unwanted bits present themselves as anomalies or effortlessly blend in. This exhibition embraces the 'danger' that exists in the ability of a person (Niklavs Rubenis) to detect life in them before becoming unidentified parts of a waste pulp dumped somewhere close to or far from their departure point. The items that were redefined through craft and skills were collected from the side of the road; most of the time they patiently sit there and wait till they get decomposed or carried away by the wind; rarely they become intentionally discovered. The process of spotting them requires a concernful awareness, a conscious state of being where surroundings are sensed and cared for. Through Niklavs Rubenis' 'concernful awareness', things alive and well, yet scratched and bruised, were redefined through an interpretation that stepped outside the sphere of a mechanistic categorisation of artefacts-the maker chose to allow the materials to guide the practice, the practice was guided by an intentionality driven by responsibility-alive things need to remain alive. This mode of crafting grounded in reviving via re-imagining, enabling instead of imposing and retaining instead of producing negotiates the unsustainable in ways that beg for attention. Why is the milk carton so unwanted after its content is gone? Why does even recycling appear to be an act of balance between throwing away and buying anew?

In this context, the exhibited items depict a dialogue with abandoned practices such as repair and remaking and a re-evaluation of the practice of making within a modern world; is it for the sake of making? Or for the sake of the maker? Does the maker's ontology depend on the life or death of things? Some of the questions are being answered by crafting; life is preserved by letting the sitting bench retain its identity and its previous life, and hold on to the materials that have survived the test of time. Death is prevented by saving a yet to be reconfigured material from where it is left to die. In light of those answers, waste feels like a blasphemy; an insult against whatever can be rescued and revived. Crafting 'waste' becomes a revelation of humans' faulty nature to appreciate life and waste 'appears as a queer connection of a word with an object' (Wittgenstein cited in Panagia 2015, p.108). What this means is that waste is just a naming that wrongfully identifies as litter, debris, junk that which is clearly not, due to humans' limitations, their inability to find new affordances in things, to creatively reawaken a dead imagination. This reality could be and has been interpreted by a number of designers and artists as a call for yet another aesthetic exercise. But it is clearly not. In circumstances where the Anthropocene has reached a point of no return, repairing, remaking, repurposing, reusing every little thing that can be retained are activities attached to survival, to recognising that material resources have been drained and the present and upcoming natural disasters caused by climate change will no longer enable sustaining a lifestyle built on excess and blinding narcissism.

With this in mind, this exhibition is an invitation and a political act. Notwithstanding 'waste' not being the right word for the materials used and revived but a strong indication of how makers treat them, next to crafting it becomes a protest. The exhibits contest current perceptions that signify making as self-indulgence and critique the lack of responsibility that characterises contemporary ideas of what objects should be or look like. Additionally, the craftsman, Niklavs Rubenis, by putting his skill s in good use he revalues materials in a manner, which encourages not just his fellow practitioners but also his students to rethink making; he projects his expectation to see them treat crafting not as a spontaneous activity of producing but as mindful acting upon materials driven by whys and hows.

To conclude, attempts to fix and find solutions through practices of design and art tend to fail because the sacrifice of not making appears to be too big to accept. Identifying the work as more important than the self and the process as more crucial than the outcome may create frameworks of conscious unmaking and appreciation of what is still 'dangerously' alive.

Dr. Eleni Kalantidou is a design psychologist, researcher and educator; she is the current convener, design futures and convener, master of design futures at Griffith University.

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Crafting Waste

Exhibition runs from 26 May – 9 July 2016

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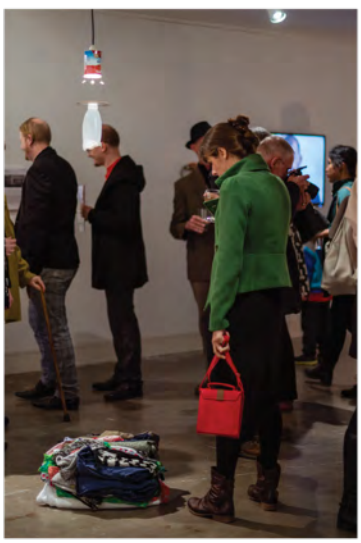
Previous Page and Above: ***A4.21 & A4.22: Exhibition essay by Dr. Eleni Kalantidou.***

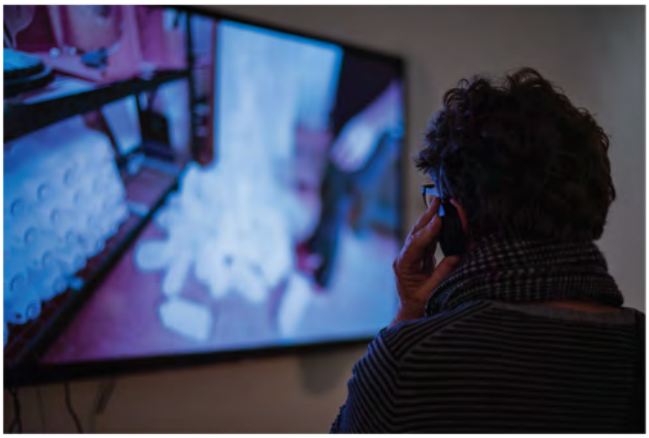


Above Left:
A4.23: Side Table.
Above Middle:
A4.24: Tin Can Lights.
Image by Saini Copp.
Above Right:
A4.25: Tin Can Lights.
Image by Saini Copp.
Middle:
A4.26: Exhibition.
Image by Saini Copp.
Below Left:
A4.27: Exhibition.
Image by Saini Copp.
Below Right:
A4.28: Tin Can Lights.
Image by Saini Copp.

Above: ***A4.29: Tin Can Lights.*** Image by Saini Copp.
Below: ***A4.30: Tin Can Lights and Orange Light.*** Image by Saini Copp.

Above: ***A4.31: Tin Can Lights.*** Image by Saini Copp.
Below: ***A4.32: Milk Bottle Light.*** Image by Saini Copp.

Above: ***A4.33: Ottomans.*** Image by Saini Copp.
Below: ***A4.34: Ottomans.*** Image by Saini Copp.

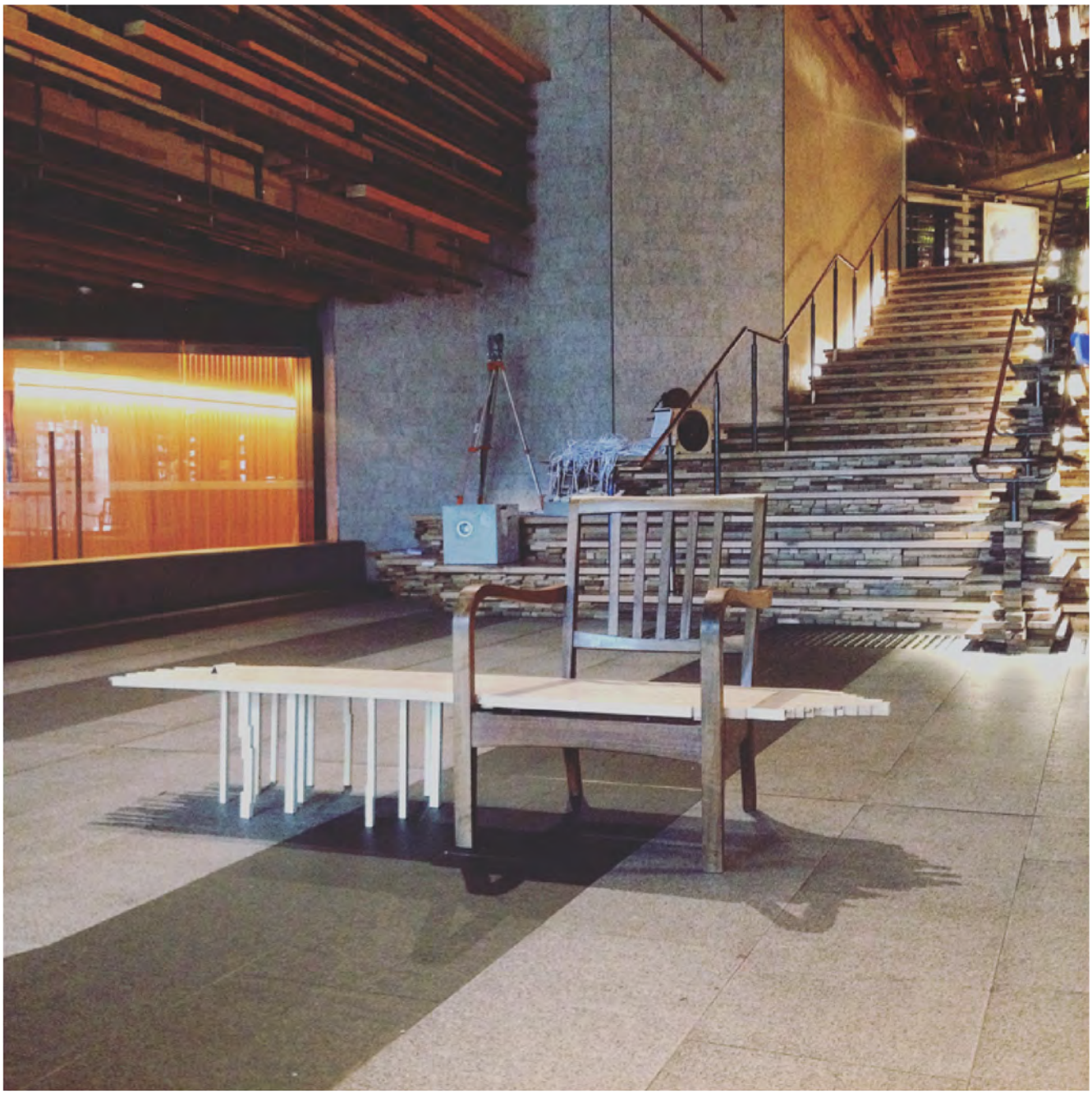


Above: ***A4.35: The Things I Think With.*** Image by Saini Copp.
Below L: ***A4.36: Short film viewing.*** Image by Saini Copp.
Below R: ***A4.37: Short film viewing.*** Image by Saini Copp.

Above: ***A4.38: Exhibition labels from discarded cardboard beer packaging.*** Image by Saini Copp.
Below: ***A4.39: Exhibition labels from discarded cardboard beer packaging.*** Image by Saini Copp.

A4.40: Exhibition layout. Image by Saini Copp.

5. PROCESS: OBJECT THERAPY



A5.1: Amy's Fred Ward furniture repaired by Niklavs Rubenis.

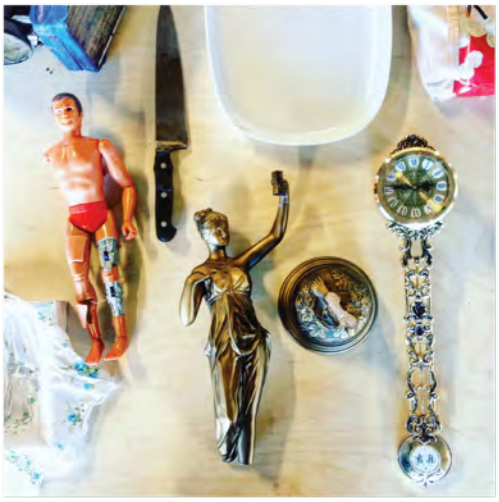
Project Overview
I repaired work for *Object Therapy*, aside from also acting as a co-researcher and co-curator. The items assigned were two furniture pieces designed by notable Modernist designer Fred Ward. The Heritage Officer from the Australian National University (ANU) submitted these objects. I simply used one to fix the other.

Details
Name: Amy's Fred Ward Furniture.
Year: 2016.
Materials: Fred Ward chair (Queensland Walnut), Fred Ward bed head (Silver Ash).
Dimensions: 2100 x 550 x 800 mm.

Exhibited as part of:
Object Therapy (Hotel Hotel, Canberra, Australia), October 2016.

Touring exhibition:
Australian Design Centre, April – June 2017.
Noosa Regional Gallery, December 2017 – January 2018.
South Australian School of Art, February – March 2018.
Design Tasmania, July – September 2018.
Alcoa Mandurah Art Gallery, November – January 2019.
Manning Regional Art Gallery Taree, April - June 2019.
Lismore Regional Gallery, June – August 2019.
Tamworth Regional Gallery, September – October 2019.



Above: A5.2: Video interview setup.
Below: A5.3: Selection of submitted objects.

A5.4: Amy's Fred Ward Cabinet/Bed Head.
Image by Lee Grant (courtesy Guy Keulemans).

A5.5: Amy's Fred Ward Chair.
Image by Lee Grant (courtesy Guy Keulemans).





Above: *A5.6: Amy's Fred Ward Chair documentation.*
Below: *A5.7: Knocking apart chair for re-gluing.*

Above: *A5.8: Amy's Fred Ward Cabinet/Bed Head.*
Below: *A5.9: Sliced up cabinet/bed head to expose original joinery. Marking and laying out components prior to gluing.*

Above Left: ***A5.10: New seat glued together from sliced cabinet/bed head components. Wedged mortise and tenon legs through seat.***
Above Right: ***A5.11: New seat and repaired chair (workshop).***
Below: ***A5.12: New seat and repaired chair.*** Image by Lee Grant (courtesy Guy Keulemans).

A5.13: Exhibition opening at Hotel Hotel. Opened by Professor Stuart Walker.

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